MISSISSIPPIAN CAPITALS: AN ARCHAEOLOGICAL INVESTIGATION OF PRECOLUMBIAN POLITICAL STRUCTURE

By

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Claudine Payne

For my mother,
Marjorie Hopkins Payne

and in memory of my father,
Richard McDonald Payne

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Examining the built environment of political capitals in chiefdoms offers archaeologists one means to explore the dynamics of chiefly political structure. The investigation of political capitals provides useful insight into the nature of political structure because a capital's shape and size reflect various aspects of the leader's power (the ability to control others' actions) and authority (legitimized power). This is primarily because the interaction between leaders and populace requires that leaders advertise their access to power and authority in order to maintain them. One highly effective means of advertisement is through architecture, especially the architecture of the capital.

Cross-cultural data from 30 chiefdom areas worldwide demonstrate that the built environment of chiefly capitals reflects aspects of political structure. Characteristics relating to size and number are shown to express the chief's power (e.g., the ability of the chief to mobilize labor). Characteristics relating to location

(horizontal or vertical), form, and decoration convey information about the chief's authority.

The Mississippian world (the southeastern and midwestern United States between about A.D. 900 and 1600) offers a venue for the study of chiefly capitals in the archaeological record. Data compiled from 536 Mississippian mound sites reveal the wealth of archaeological information available on the built environment of Mississippian capitals. This abundance of data makes possible broad comparative analyses of many architectural features of Mississippian capitals, including layout, orientation, platform mounds, chiefs' houses, religious structures, earthworks, and palisades.

A closer look at one Mississippian capital provides detail on political dynamics in an individual Mississippian chiefdom. The Lake Jackson site in northwest Florida was the capital of the Mississippian chiefdom of Apalachee. Based on the results of archaeological investigations at the site, a ceramic chronology and an analysis of the structure and development of the site is presented. The considerable data from Lake Jackson make possible the analysis of transformations in power and authority both within the larger context of the Mississippian world and in the narrower world of Apalachee.

CHAPTER 1
INTRODUCTION

In the American Southeast between about A.D. 900 and 1600, a group of aboriginal societies developed that were roughly similar in configuration. Called Mississippian by archaeologists, these societies comprised a network of independent polities set in largely similar environments and linked by social and political alliances, trade, ritual, and a political ideal (Scarry 1993).

Mississippian societies shared (1) an increased population, (2) a dependence on maize agriculture accompanied by exploitation of land and aquatic fauna, (3) an extensive exchange network involving marine shell, copper, and other exotic artifacts, (4) a worldview/belief system which varied geographically in detail but not in outline, and (5) a ranked (or chiefdom) form of sociopolitical organization (Peebles and Kus 1977; Griffin 1985).

In the Mississippian world there was diversity as well as similarity (Steponaitis 1986:387-393; Smith 1986:57-63). Individual polities often varied greatly in size and complexity. Not infrequently, polities deviated in some respect from the overarching ideal. Those on the periphery traded and allied themselves with foreign polities. In some places, local ideals overshadowed the regional.

Despite the differences, a fundamental identity marked the polities within the network and distinguished them from outside polities. This identity is recognizable in material remains throughout the region. Religious objects, for example, though

varying in detail, clearly represent a shared cosmology (Brown 1985; Knight 1986; Muller 1989:25). And, particularly appropriate to this study, the shapes of the political capitals of the polities share the same basic configuration (again, despite variations in detail).

This study focuses on the examination of political capitals as one means to understand Mississippian political structure. The investigation of political capitals provides a useful insight into political structure because a capital's shape and size reflect various aspects of power and authority. Consequently, this dissertation explores the nature of chiefly capitals (Chapter 2); the shape of Mississippian capitals, from the size and layout of the sites to the form and nature of their architectural constructions and spaces (Chapters 3 and 4); and the characteristics of a typical Mississippian capital, the Lake Jackson mound group near Tallahassee, Florida (Chapter 5); with concluding comments on the utility of studying political structure by analyzing the built environment of the capital (Chapter 6).

Throughout the course of this dissertation, several terms are used which are basic to the discussion. These terms--chiefdom, power and authority, and capital--all contain some ambiguity. Because of the ambiguity and the importance of these concepts to the discussion here, they merit some explication. The following three sections thus provide background information and define my use of these three concepts.

Chiefdoms

Elman Service presented an early and highly influential definition of chiefdom. For Service, "chiefdoms are *redistributional societies* with a permanent central agency of coordination" (1971:134, emphasis in original); moreover, chiefdoms are characterized

by the "pervasive inequality of persons and groups in the society" (1971:145). In recent years, the role of redistribution of subsistence products across regions in maintaining chiefly societies (a central concept in Service's formulation) has been reconsidered by Timothy Earle (1977) and found to be of less import than Service believed. Nevertheless, the recognition of centralization as essential in the definition of chiefdoms is an important one, as is that of society-wide inequality.

Service's concept of chiefdom (part of a wider scheme classifying human societies in terms of evolutionary stages of organizational complexity) generated a flood of commentary which continues to this day. Researchers soon produced additional definitions of chiefdoms (Renfrew 1973; Carneiro 1981; Wright 1984; Creamer and Haas 1985). Some investigators attempted to subdivide or refine the category (Renfrew 1973, 1974; Steponaitis 1978; Carneiro 1981). Others discussed the place of chiefdoms in evolutionary schemes (Webb 1973; Sanders and Webster 1978; Carneiro 1981). Scholars explored the dynamics of chiefdoms (Friedman 1975; Petersen 1982; Wright 1984; Anderson 1990) or broke down the variables of political complexity for research (McGuire 1983; Feinman and Neitzel 1984; M.E. Smith 1985).

While it is impractical to review all the research published on chiefdoms in the last thirty years, it is useful to consider several works that bear most directly on the research presented in this dissertation. First are those defining the chiefdom.

Robert Carneiro's (1981:45) definition, which he calls a structural one because of its emphasis on political forms, focuses on the supralocal nature of chiefdoms. "A chiefdom," he says, "is an autonomous political unit comprising a number of villages or communities under the permanent control of a paramount chief." This definition

serves to distinguish chiefdoms from egalitarian societies, but not, if the term "king" were substituted for "paramount chief," from states.

Henry Wright (1977, 1984) defines chiefdoms largely on the basis of their decision-making capabilities. In a chiefdom, therefore,

> central decision-making activity is differentiated from, although it ultimately regulates, decision-making regarding local production and local social process, but is not itself internally differentiated. It is thus externally but not internally specialized (1977:381)

In chiefdoms, then, an institutionalized and centralized political office exists but is generalized in its functioning. Each level of political administration is similar in structure. Subordinate political units simply replicate higher level political units at a smaller scale.

Like Wright, Ronald Cohen notes the generalized nature of political control (1978:4-5) and adds to his definition of chiefdoms the regular occurrence of fission (1981). This contrasts with circumscription theories of the development of centralization (e.g., Carneiro 1971, B. Smith 1978, 1985) which postulate that the inability to fission in times of societal conflict leads to the rise of chiefs. Support for Cohen's contention comes from ethnographic descriptions of frequent fission in chiefdoms (see Mitchell 1956, Petersen 1982, and Leach 1965 for examples).

There are certain commonalities in these definitions. Most important is the centralization of decision making. Related to the concept of centralization but not always made explicit is the supralocal aspect: chiefdoms contain at least one decision-making level above the local level (see also Wright and Johnson 1975). A third theme is the generalized nature of leadership. The subject of the definition of the chiefdom will be returned to shortly.

Early on, anthropologists recognized that the category of chiefdom contained a tremendous amount of variability. In population, for example, chiefdoms varied from a few hundred people (e.g., the Mandari of east Africa) to tens of thousands or more (e.g., Tahiti in the south Pacific). This recognition prompted subdivisions of the category based on size or structure (e.g., Julian Steward and Louis Faron's [1959:177] theocratic vs. militaristic chiefdoms or Colin Renfrew's [1974:74] group-oriented vs. individualizing chiefdoms).

In the present study, divisions based on size or levels of development are pertinent. Vincas Steponaitis (1978:420) described chiefdoms as simple and complex: simple chiefdoms have one level of political hierarchy, while complex chiefdoms have two or three. Carneiro (1981:47) found this two-part division too confining and not representative of the range of variation in chiefdoms. He proposed a three-part division: minimal, typical, and maximal chiefdoms. For Carneiro,

> a *minimal* chiefdom is one that meets the minimal requirements of a chiefdom . . . but does not go far beyond them. A *typical* chiefdom is one that is clearly a chiefdom, with elaborations in many aspects of its political and social structure, but still well below the level of a state. A *maximal* chiefdom is one that has become large and complex enough to approach the threshold of the state" (Carneiro 1981:47, emphasis in original).

Critiques of the Chiefdom Concept

A number of criticisms have been lodged against Service's evolutionary stage scheme since it was first put forth. Some of these criticisms are reviewed briefly in this section, and responses to them are considered in the next.

Some researchers (e.g., Lewis 1968; Kehoe 1980) are loath to lump societies into "pigeonholes," arguing with some justice that categorization obscures the great variability and dynamic nature of human groups. The argument goes as follows.

Typologies, by their nature, consist of static categories (Lewis 1968:101). To divide up what is essentially a continuum, arbitrary divisions must be made. The resulting categories are biased at best, obscurationist at worst.

Service has also come in for criticism for the way he defined two of the original categories in his evolutionary scheme. Herbert Lewis and Morton Fried have both taken umbrage at the use of the term "tribe," Fried going so far as to designate it the second "most egregious case of meaninglessness" in the language of anthropology (Fried 1968:4-5). Fried's strongest criticism is that tribes

> may well be the product of processes stimulated by the appearance of relatively highly organized societies amidst other societies which are organized much more simply. If this can be demonstrated, tribalism can be viewed as a reaction to the formation of complex political structure rather than a necessary preliminary stage in its evolution (1968:15).

Lewis suggests that the category of tribe is too general and too vague to be of use (1968:101-104). Conversely, Lewis argues that "chiefdom" is too specific, based on societies in a single geographic area (Polynesia) and not applicable worldwide (1968:104-105). For both authors the categories have no relation to evolutionary reality but are constructs based on (1) in the case of "tribe," "an ethnographer's (or administrator's) abstraction" (Lewis 1968:102) or a modern reaction to colonialism (Fried 1968:17-18) and (2) in the case of "chiefdom," "the idea that a system with some principle of hierarchy and overall integration *should* have succeeded the multi-group segmentary tribes" (Lewis 1968:105).

Another problem with Service's scheme is the notion of progression inherent in his use of the term "evolution" (Claessen and van de Velde 1985:5-6). Service implies that human societies move through increasing levels of complexity and end up at the highest possible level (Service 1971:5). This view contradicts both the scientific view

of evolution (one which excludes directionality) and social reality (in which polities decline as well as develop) (Claessen and van de Velde 1985:6). A byproduct of directionality is the tendency to see the whole process as a unilineal one--bands become tribes, tribes become chiefdoms, chiefdoms become states--again ignoring the reality of multiple forms of change (Claessen and van de Velde 1985:11).

Estellie Smith (1985) points out some practical objections to using Service's scheme. One is the reification of the stages. She finds that "more attention is being directed toward fitting the data to the model than to understanding what those data can indicate about the dynamics of social organization" (1985:97). Smith's second objection to Service's scheme is the difficulty of distinguishing chiefdoms from states (1985:97). Cohen's (1981:92) statement that "Ankole was included in Claessen and Skalnik's (1978) work as a state . . . I see it as a chieftaincy" is merely one example of this problem.

A Defense of the Concept of Chiefdom

Some of these criticisms and objections to Service's formulation are reasonable and merit a response from any researcher using the scheme. Other criticisms do not hold up under scrutiny.

A reluctance to "pigeonhole" societies is understandable, given the wide variability in human societies, but this reluctance results in a loss of understanding and largely prevents cross-cultural comparisons of societies as systems. Classification, if approached cautiously, provides (1) a means of creating order out of chaos and (2) a shorthand of terms understandable by large numbers of researchers. No classification will account for all variability, nor should we expect it to. The goal of classification is not to create a perfect typology that fits any and every contingency but to determine

what that typology tells about patterns in the data. Treating classification as an end is likely to lead to the problems Smith pointed out--reification of categories and attempts to force data into those categories. This is a problem not of classification but of misuse of a typology by researchers. Such misuse should not lead us to reject classification itself. Nevertheless the appearance of misuse should lead us to consider our own use carefully lest we succumb to the same temptation.

The constructs "tribe" and "chiefdom" have been criticized by Fried (1968, 1975) and Lewis (1968). Their criticisms of "tribe" seem to be justified in some measure, and Service himself dropped the term later (Service 1975). Lewis's criticism of the category of chiefdom, however, is not borne out in ethnographic studies. Cohen and Schlegel (1968), in a cross-cultural examination of societies that are neither bands nor states, find that "the polities [break] . . . clearly into chief and non-chief categories based on quite a distinctive set of associated qualities" (1968:144). And, to answer Lewis's (1968:104-105) criticism that the concept is based on a single geographic area (Polynesia), it should be noted that chiefdoms occur worldwide, except in Australia (Cohen and Schlegel 1968; Carneiro 1981:48-49).

The fluidity and dynamism of human societies justifies a closer look at criticisms about the directionality and unilinealism implicit in Service's scheme. Probably most researchers today would not presume to suggest a unilineal band-to-tribe-to-chiefdom-to-state trajectory, but would recognize both the lack of directionality and the multiple trajectories possible (see, for example, Anderson 1990; Peebles 1986; Sanders and Webster 1978; Claessen, van de Velde and Smith 1985). Doubts about the utility of the overall scheme as an evolutionary process should not lead to rejection of the utility of the individual constructs. It is clear that chiefdoms

are recognizable entities in the ethnographic record (Cohen and Schlegel 1968; Carneiro 1981). Service's scheme, then, is useful in some situations, such as when comparing societies in different categories and, as in this study, when addressing questions general to a category. If we accept the reality of chiefdoms, we can ask, "What is the nature of capitals in chiefdoms?" Conversely, we should be willing to set aside the classification when it interferes with the study of a particular issue (short-term changes, for example, which might be studied better by analyzing particular variables).

The Concept of Chiefdom Summarized

In this dissertation, the view that the concept of chiefdom is a viable one is accepted, with the caveat that some subjects (e.g., the internal dynamics of chiefdoms) are better served by setting aside the concept for the course of the analysis. The category of chiefdom is seen as a descriptive one, not as an "evolutionary stage." The term "evolution" is avoided here because of its unfortunate connotations of directionality in anthropological literature. When discussing changes from one form to another, e.g., chiefdom to state, the less value-laden word "transformation" is used. It is clear that human societies are extraordinarily fluid in composition, but it is equally clear that recognizable patterns of political organization exist.

The pattern of political organization in chiefdoms exhibits a centralized, legitimized political power absent in egalitarian groups. Centralized societies show some tendency toward increasing population density, but the size difference is less important than differences in the structure of political power and authority. The same is true of the distinction between chiefdom and state. The structural difference in this case is the internal specialization of the centralized state government (Wright 1984:42).

To summarize the view of chiefdom followed in this study: A chiefdom is a multi-local polity with political power vested in a central office. Political power is, in contrast to that of the state, generalized; each level of administration replicates levels above or below. Carneiro's terms *minimal, typical,* and *maximal* (see above) are used to describe some size variability within chiefdoms. The term *simple* or *petty chiefdom* is occasionally substituted for minimal chiefdom, and when discussing typical and maximal chiefdoms, the two are sometimes grouped together as *complex chiefdoms.*

Power and Authority in Chiefdoms

Central to the study of political structure and to the analysis of capitals in chiefdoms are the concepts of power and authority. Despite apparent consensus among students of political structure regarding the importance of these concepts (Swartz, Turner, and Tuden 1966:7; Lewellen 1983:89), there is disagreement about the definitions of these terms. Indeed, power and authority are sometimes used interchangeably (see for example Fogelson and Adams 1977). This fuzziness of terminology obscures an important distinction, one that is integral to the study of political structure. The discussion below relies largely on the definitions of political anthropologists Ronald Cohen (1970), Henri Claessen (1988), and M.G. Smith (1968), and political scientist David Bell (1975), who are very careful to distinguish between power and authority.

Power

The definition of power contains two related elements: "the ability to pursue one's will effectively" (M.G. Smith 1968:193) and "an ability to influence the behavior of others" and control their actions (Cohen 1970:488). The use of the term "ability" in

these definitions further emphasizes that power is not the *right* to control people's actions, but the *capacity* to control them. Power is control of people--their labor, services, or products--regardless of the holder's right to exercise power.

Sanctions (both positive and negative) play a large part in the exercise of power (Bell 1975:21). A positive sanction takes a form like this: "If you do what I want you to do, I will give you something you want." A negative sanction, which might work equally well to gain control of the other's actions, looks like this: "If you do not do what I want you to do, I will harm you in some way."

It is important to separate power itself from the bases of power--the ways in which individuals gain or maintain power. The simplest, and perhaps most fragile, power base is persuasion, usually by force of personality. The second power base is the competent exercise of leadership or the potential for it. In other words, the individual who handles power wisely gains power. Third, and perhaps most cited as a source of power, is the control of valued resources (cf. Adams 1975:19; Claessen 1988:23). These resources may be tangible (e.g., exotic trade goods) or intangible (e.g., specialized information, access to supernatural forces). The fourth power base is force. This base requires a certain amount of power to start, that is, the leader must control the actions of the individuals who make up the force (i.e., the warriors or soldiers). And, finally, power may be based on authority or the right to exercise power (see below). These power bases are not always independent of each other, but often overlap and interlock.

Authority

"Authority is legitimate power" (Cohen 1970:488). Legitimacy is "the situation in which the rulers as well as the ruled share the conviction that the existing division

of power . . . is right" (Claessen 1988:23). Legitimacy thus provides the justification or right by which an individual may exercise power. Authority, then, involves two main concepts: legitimate right to power and acceptance of (or at least acquiescence to) that right by the leader's subjects.

These two characteristics make possible commands by those in authority to gain their wishes. This contrasts with the contractual nature of power acquisition. An individual in authority no longer needs to promise or threaten ("If you do this for me, I will do that for you") to gain his will, but may simply say, "Do this" (Bell 1975:37; M. G. Smith 1968:193), with every expectation of being obeyed without question.

The establishment of authority depends on the successful invocation of one or more of several sources of societal values. These include (1) tradition (history, legends, precedent); (2) inheritance or social rank; (3) support by the gods ("divine right"); and (4) a code or laws. The last type of authority occurs primarily in states; the first three types appear in chiefdoms as well.

Once authority is established, a leader can maintain it only if the values he invokes continue to be accepted by his followers. These followers consist of an inner circle (nobles, the leader's relatives, and others with access to him) and an outer circle (commoners) (Claessen 1988:25-26). Although a successful leader must maintain a relatively high degree of legitimacy in both circles, satisfying the inner circle becomes increasingly important as the complexity of the polity increases (cf. Claessen 1988:30).

The Interaction of Power and Authority

In egalitarian societies, leaders are leaders by virtue of their own personal power--e.g., their ability to hunt or find food resources, lead raids, settle disputes, or

contact the spirit world. Power in one realm often does not extend into another. Power is thus individualized and situational. When leaders die or decline, their power vanishes, it is not passed on to a designated successor; power must be established anew with each new leader. Thus in egalitarian societies, though the power of some individuals may be great, authority is minimal (based largely on tradition). This is the case even for Big-Man societies where considerable generalized power may be exercised by one person.

In chiefdoms, leaders are leaders by virtue not only of their own power (control of others' actions through personality, capability, wealth, or force) but by virtue of their authority (their right to lead). Unlike the segmented power and minimal authority of egalitarian societies, power and authority in chiefdoms cross-cut many realms--political, economic, and religious. The invocation of authority results in a leadership that is no longer individualized and situational but generalized and heritable. Authority exists independent of individuals and thus may accumulate from one generation to the next. The possibility exists then of ever-increasing amounts of power and authority.

Nonetheless, the nature of power and authority means that the success of chiefs depends entirely on the cooperation or acquiescence of their followers. The power relationship between chief and followers is reciprocal. The followers give the chief their support in the form of tribute, corvee labor, and military service. In return, the chief maintains a prosperous economy, keeps the polity secure from enemies and internal dissension, and provides for the people in time of need. In addition, to retain the support of the nobles (the inner circle), the chief must maintain control of wealth

and prestige items and privileges and must distribute them generously to the nobles (and judiciously, if at all, to non-nobles).

It is also important that the chief and most of the followers (especially the inner circle) share the same view of the chief's right to rule. Changed legitimacy (the basis for authority) on the part of either the ruler or the ruled can undermine the leader's success. For example, reluctance on the part of followers to recognize the leader's *right* to rule forces the leader to rely heavily on sanctions (promises or threats) to gain their cooperation. In times of growth or infrastructural crisis, when challenges to the leader's power abound, the leader may not be able to compete adequately through sanctions for the support of his followers.

The Role of Communication in Maintaining Power and Authority

As has been seen, for a leader to acquire and maintain power and authority, he[1] must have the support of followers (both inner and outer circle). To get and keep this support, he must convince followers that he has both the ability to carry out promises and threats and the legitimate right to rule. Acquisition and maintenance of power and authority, then, is largely a "public relations job." The leader must "sell" followers on his ability and right to rule. And, as can be seen every day in the modern world, success in sales depends as much on the effectiveness of advertising as on the quality of the product.

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[1] The use of masculine pronouns in this discussion of leaders (and elsewhere in this dissertation) comes at the expense of unfortunate implications that all leaders are male (they are not, of course). Nevertheless, it is nearly impossible to discuss the nature of leaders without the use of a third-person-singular pronoun. Masculine pronouns were chosen because the majority of chiefs were and are male.

Advertising power and authority, as with any kind of advertising, is most effective when it is easily understood, highly visible, and reaches the largest audience possible. Apart from actual words (persuasion), the best way to communicate an idea is through visual symbols. The visual representation of power and authority may be either deliberate or unintentional, but it is as essential to the leader's success as actual abilities and rights are.

Power is communicated primarily through rituals, activities, and constructions that demonstrate the size of the leader's following. Large public gatherings (whether coerced or consensual) show participants and outsiders (e.g., foreign visitors) the might of the chief who convened the assembly. So, too, does evidence of the ability to mobilize a large work force. A. C. Milner (1982:27) describes a Malay ruler who used this principle to communicate his power to a Chinese emperor:

> When the Sultan of Melaka wanted to impress the Chinese Emperor he sent him a ship full of sago. The Emperor was told that the Malay ruler had ordered each of his subjects to roll out a grain of sago until there were enough grains to fill a ship: "That will indicate," explained the Melaka envoy, "how many are the subjects of our Raja." "This Raja of Melaka," the Chinese ruler is made to reply, "must be great indeed."

Large constructions also provide evidence of large work forces and have the added advantage of being more permanent and visible than public gatherings or the collection of tribute.

Symbols of power differ in form but share one characteristic, that of excess. Constructions are bigger than necessary, crowds overflow public spaces, and feasts provide more food than anyone can eat. Size and number are thus indicators of power.

Authority (the legitimate basis of power) is more dependent than power on symbols for communication (i.e., a certain amount of power is communicated directly

through the continuing prosperity and security of the polity). Because authority exists solely in the minds of the followers, it must be spelled out, redefined, or recreated constantly. Authority is advertised by intangible symbols such as ritual ceremonies, mythology, ritual gestures (e.g., salutes, blessings), and protocol surrounding the treatment of the leader. Authority is also conveyed by tangible symbols such as the leader's regalia, the physical surroundings of the leader, and the settings for public rituals.

Although authority symbols may, like power symbols, be excessive in nature, the primary information being conveyed is that the leader is different and special; ability to mobilize people is less important. Symbols of authority, then, convey information by decoration or quality of workmanship and by their limited distribution.

A successful leader must learn to manipulate these symbols. If he handles them ineptly or neglects them (e.g., denies nobles access to authority symbols, converts to a minority religion, discontinues public or elite rituals), he conveys disdain (whether intentionally or not) for the followers' notion of legitimacy and erodes their faith in his own right to rule, leaving himself vulnerable to challenges to his power.

It follows then that a leader's continuing success also depends on *access* to material symbols of authority and control of them. If, for reasons beyond his physical control, he loses access to or control of the accepted symbols of authority, the leader's own legitimacy is undermined in the eyes of the followers. The consequences of this undermining depend largely on historical circumstances. If the polity is prosperous and the chief is competent, he (and his successors) may survive by shifting the basis of legitimacy to one for which he can control the symbols. If the polity is struggling

economically, if there is internal dissension, or if the chief is an incompetent ruler, the loss of legitimizing symbols may result in a reformation of the power structure (invariably including deposition of the incumbent).

It is, therefore, vital for a leader to advertise his abilities and rights. As has been seen, leaders may do this through several media (words, rituals, protocol, regalia, and structures). In an archaeological study, not all media are available for analysis. One that is available and relatively accessible is the built environment. The built environment is a particularly useful medium for study as it can be seen as a semiotic system (Preziosi 1979:1 and cf. Knight 1981:iii), one which uses architectonic elements to communicate. If this is so, then the structures and spaces in the leader's immediate environment (the capital) will communicate information about the political structure of the polity. This is the premise on which this dissertation is predicated. Let us now turn to a brief discussion of capitals.

Capitals

What is a Capital?

The term "capital" is not often used in connection with non-state political centers. Perhaps this is because of its modern connotations. After all, London, Tokyo, and Mexico City are capitals. These sprawling cities, hundreds of square kilometers in area, bear little resemblance to the precolumbian 24-hectare chiefly center at the Lake Jackson site near Tallahassee, Florida. Is it reasonable to lump such disparate entities under the same rubric? Yes--with one caveat.

"Capital" is an appropriate word to describe political centers of any scale. It derives from the Latin for "head," and its dictionary meanings include "seat of

government" and "chief or principal city." If we eliminate any implication of "city" from the definition (this is the caveat mentioned above), "capital" describes chiefly religio-politico-administrative centers quite well and has the advantage of being succinct. Furthermore, "chief" (and through it, "chiefdom") derives from the same Latin root, making the use of "capital" to describe a chiefly center all the more appropriate.

Capitals are not found in all societies. The notion of a seat of government or even a principal settlement presupposes the presence of a centralized government. We should not expect to find capitals in egalitarian societies. Centralized polities such as chiefdoms, early states, and industrial states all have capitals, though these may vary in size and structural complexity.

Capitals as Reflections of Political Structure

The capital of a polity provides a very visible medium for the expression of the power and authority of the centralized government. Few archaeologists have explored the symbolic nature of capitals in any detail (but see de Montmollin 1989), but it is not a new idea to historians and art historians. So Peter Duus (1969:22) says confidently regarding an early Japanese state,

> The central bureaucracy was housed in a permanent capital city, *a visible embodiment of the power of the monarch.* Laid out on a symmetrical grid pattern, *it symbolized the orderly and harmonious character of imperial rule* (emphasis added).

Though archaeologists studying chiefdoms have rarely looked to the structure of capitals for information on political organization, the concept is merely an extension of a basic tenet of archaeology and geography. This tenet holds that the spatial arrangement of a polity's settlements reflects aspects of the political and social

organization of the polity (see, for example, Findlow and Goldberg 1983:214; Steponaitis 1978; Renfrew and Level 1979; Wright and Johnson 1975). The study of the spatial arrangement of particular settlements (capitals) simply focuses the analysis more sharply.

In the next chapter, information from 30 ethnographically and historically known chiefdoms is examined to establish the parameters of size and structural characteristics of chiefly capitals. Subsequent chapters will focus on Mississippian capitals and the Lake Jackson site, a precolumbian capital associated with the Fort Walton culture, a Mississippian manifestation in northwest Florida.

CHAPTER 2
CAPITALS IN CHIEFDOMS

In studying political organization, archaeologists have attributed certain characteristics to political capitals. Colin Renfrew and Eric Level (1979:146), seeking to determine polity area from the location and size of the capital, make the assumption that the capitals "are in general the largest settlement or administrative sites within the territories of their polities." Similarly, Henry Wright (1984:43) characterizes paramount capitals as

> both larger than and architecturally differentiated from ordinary chiefly centers, both physically accommodating the paramount's following and providing a focus for major social rituals.

Rarely are assertions like these questioned in print, but such questions are often raised verbally. Is it, in fact, reasonable to assign such characteristics to precolumbian chiefly capitals? Are there other factors that might lead a site to look like the archaeologist's very general image of a capital? Perhaps a site with a large population lies in an economically important location, and that accounts for its large size. Maybe an archaeological site with monumental architecture is a ceremonial center, not a political one.

With these questions and thoughts in mind, I reviewed the ethnographic and ethnohistoric record, looking specifically for information on the physical characteristics of chiefly capitals and other settlements in chiefdoms.

As it turns out, many of the assertions made by archaeologists are generally accurate. Some surprises do occur, however. The information in this chapter, then, is presented in support of statements such as those cited above, and additional information is offered on the shape of chiefly capitals.

Chiefdoms in the Ethnographic and Historic Record

To acquire data on chiefly capitals, 30 areas world-wide were investigated (see Table 2-1 and Figure 2-1). An effort was made to examine capitals from chiefdoms of all sizes (e.g., minimal, typical, and maximal chiefdoms).

Most groups discussed here are not single political entities, but congeries of chiefdoms similar in adaptation and political, social, and religious structure. When the Alur are mentioned, for example, the term encompasses the Ugandan chiefdoms of Ukuru, Paidha, Padea, War, and many others. In a few areas, the group name refers to a single (frequently maximal) chiefdom (e.g., Bemba or Tonga).

The nature and quality of data on chiefdoms varies greatly from area to area. Before discussing the results of the survey, then, let us examine the database itself to see how its shape might affect results.

The Geographic Shape of the Database

In this survey of chiefdoms, some geographic areas are better represented than others. More than half (17) of the cases come from Africa and Oceania (Table 2-1 and Figure 2-1). Only eight cases come from the entire American landmass. The

Table 2-1. Chiefdoms Discussed in Text.

GROUP	DESCRIPTION	LOCATION	SOURCES
Powhatan (17th century)	1 typical chiefdom	North America (Virginia)	Rountree 1989
Natchez (18th century)	1 minimal or typical chiefdom	North America (Mississippi)	Le Page du Pratz 1975 [1774]
Apalachee (16th & 17th centuries)	1 typical chiefdom	North America (Florida)	Hann 1988; Varner and Varner 1951
Calusa (16th & 17th centuries)	1 typical chiefdom	North America (Florida)	Solís de Merás 1964; Hann 1991
Taino (16th century)	1 typical chiefdom	Central America (Hispaniola)	Wilson 1990
Comogre and neighbors (16th century)	30+ minimal and typical chiefdoms	Central America (Panama)	Helms 1979
Omagua (16th & 17th centuries)	typical or maximal chiefdom	South America (Brazil)	Meggers 1971; Fritz 1922
Tapajos (16th century)	typical or maximal chiefdom	South America (Brazil)	Meggers 1971
Nabdam	several minimal chiefdoms	West Africa (Ghana)	Archer 1971
Bamileke	ca. 90 chiefdoms of all sizes	West Africa (Cameroon)	Littlewood 1954; Guidoni 1975
Mandari	30+ minimal chiefdoms	East Africa (Sudan)	Buxton 1963
Alur	many minimal and typical chiefdoms	East Africa (Uganda)	Southall n.d.
Ovimbundu	22 minimal and typical chiefdoms	Central Africa (Angola)	McCulloch 1952
Ila	ca. 80 minimal chiefdoms	Central Africa (Zambia)	Jaspan 1953; Smith and Dale 1920; Light 1941

GROUP	DESCRIPTION	LOCATION	SOURCES
Bemba	1 maximal chiefdom	Central Africa (Zambia)	Whiteley 1950; Richards 1939, 1971, 1972
Yao	5 typical and minimal chiefdoms	Central Africa (Malawi)	Mitchell 1956
Swazi	1 maximal chiefdom	South Africa (Swaziland)	Kuper 1963; Pettersson 1953
Zulu (19th century)	1 maximal chiefdom	South Africa (South Africa)	Biermann 1971; Pettersson 1953
Basseri	1 typical chiefdom (nomadic)	Southwest Asia (Iran)	Barth 1961
Kachin	several minimal and typical chiefdoms (in close contact with small states)	Southeast Asia (Burma)	Leach 1965; Friedman 1975
Western Malays (19th century)	typical or maximal chiefdoms	Southeast Asia (Malaysia)	Gullick 1965, 1987; McNair 1972 [1878]; Milner 1982
South Nias Islanders	several minimal chiefdoms	Southeast Asia (Indonesia)	Loeb 1935; Fraser 1968; Cole 1945; Feldman 1989; Heine-Geldern 1935; Guidoni 1975
Toraja and Luwu of South Sulawesi	neighboring minimal chiefdoms	Southeast Asia (Indonesia)	Errington 1989; Waterson 1989; Kennedy 1953; Fraser 1968
Kiriwina	minimal chiefdom	Melanesia (Trobriand Islands)	Powell 1960; Weiner 1988; Malinowski 1935, 1961 [1922]; Fraser 1968; Johnson and Earle 1987
Tikopia	2(?) minimal chiefdoms	Melanesia (Solomon Islands)	Firth 1957

GROUP	DESCRIPTION	LOCATION	SOURCES
Palau	1 typical chiefdom (formerly 2)	Micronesia (Palau)	Barnett 1960; McKnight 1974; Morgan 1988; Parmentier 1986, 1987; Smith 1983
Pohnpei	5 minimal chiefdoms (prehistorically 1 chiefdom)	Micronesia (Pohnpei [Ponape])	Hanlon 1984; Morgan 1988; Petersen 1982; Riesenberg 1968
Kosrae	1 typical or maximal chiefdom	Micronesia (Kosrae)	Morgan 1988
Tonga (18th century)	1 typical or maximal chiefdom	Polynesia (Friendly Islands)	Beaglehole 1961; Ferdon 1987
Tahiti (18th century)	2 typical or maximal chiefdoms	Polynesia (Society Islands)	Beaglehole 1955; Ferdon 1981

continent of Asia yields five cases (all but one from southeast Asia) and Europe none at all. This distribution is not a deliberate bias. Rather, it reflects the geographic availability of documentary data on chiefdoms.

In Africa and Oceania, many chiefdoms survived into modern times, to be visited and described by anthropologists and travelers in the nineteenth and twentieth centuries. These sources provide the best and most complete information on capitals.

In other parts of the world chiefdoms rarely survived into recent times. Documentation of historical chiefdoms (e.g., in Iron Age Europe, sixth century A. D. Japan, or sixteenth century South America) is scattered and incomplete at best. I

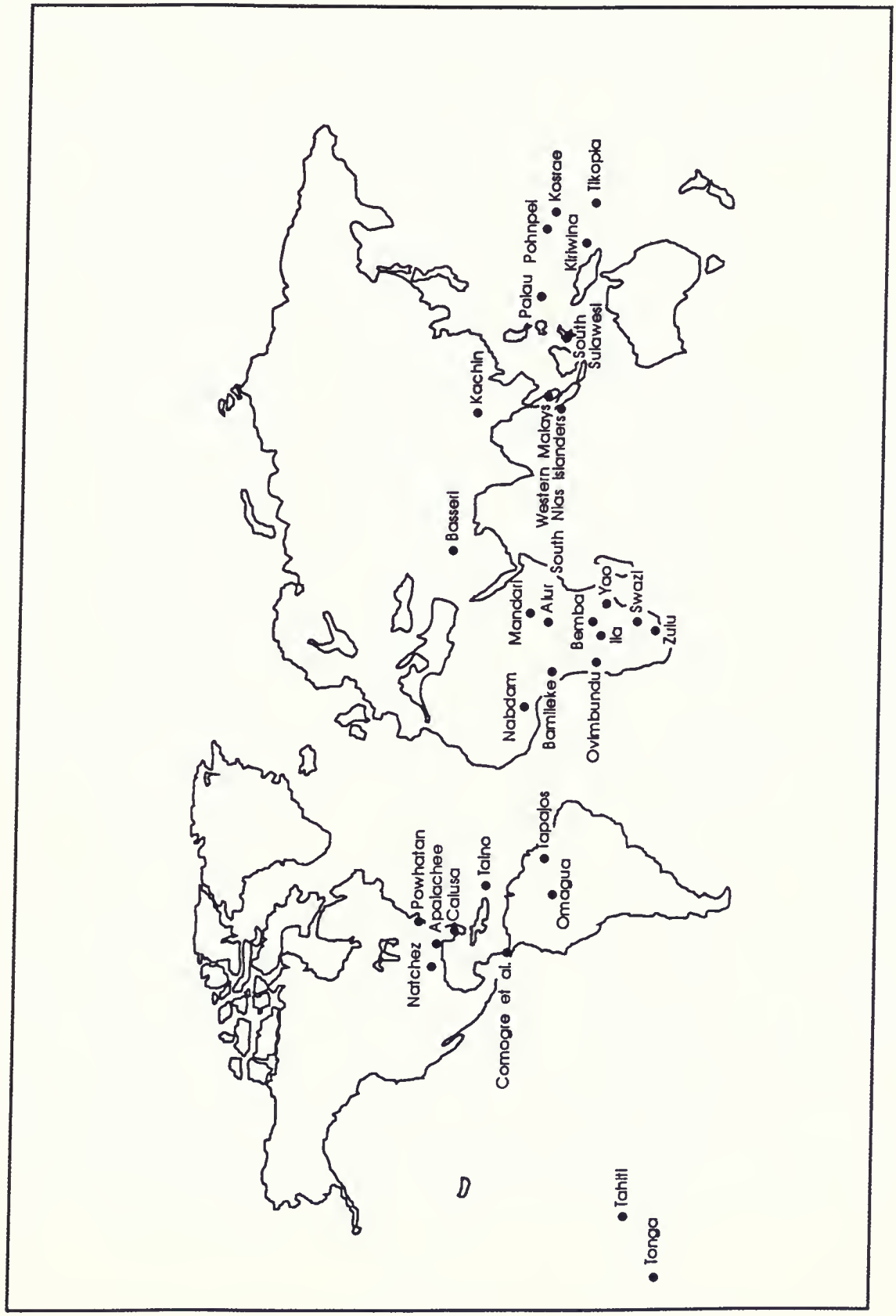

Figure 2-1. Distribution of Chiefdoms Discussed in Text.

have made an effort to include some historical chiefdoms in this study where documentation is available. Nevertheless, a substantial geographic gap remains.

Earlier researchers have been criticized for depending so heavily on Africa and Oceania in defining chiefdoms (Lewis 1968:105). However, my review suggests that while detailed studies of other chiefdoms around the world would add variations on the chiefdom pattern, the additional information would do nothing to alter the general concept of chiefdoms. So, while it would be desirable to fill in the geographic gaps, the existing database is adequate for studies of chiefdoms.

The Effect of Contact with States

Many, perhaps most, chiefdoms with ethnographic or historic documentation have been affected directly or indirectly by contact with states in one of two ways: (1) simple contact with a state-level society or (2) imposition of governmental control by a state-level society (colonialism). It might reasonably be asked if this influence introduces bias into a cross-cultural study.

The first form of contact--simple contact with a state--can be eliminated as a problem. Chiefdoms throughout the ages rarely, if ever, exist in isolation. Whatever the time period, they are subject to influences from other societies at other levels of organization. These influences may or may not be incorporated into the structure of a particular chiefdom. Unless the influences result in a transformation to a different level of organization, they should be seen simply as part of the ongoing dynamic of chiefly political organization. Thus, for example, the western Malay chiefdoms

incorporated many features of Indian states but were, in the early nineteenth century, still clearly organized at the chiefdom level[1] (see Gullick 1965).

In the second case, that of control over the chiefdom by another polity (colonial dominion), the individual circumstances must be evaluated to determine the effect on the traditional society. Some colonial situations leave the traditional political structure largely intact, merely adding the colonial government as the top political level (e.g., Apalachee, Alur, Yao, Kiriwina). For these groups, we can use available ethnographic information comfortably. In other situations, the traditional political structure is completely disrupted by colonial domination, and the ethnographic information is too distorted to be of use. Many chiefdoms in the late twentieth century fall into this category.

It is important therefore to evaluate data carefully, given the possibility that some features of a particular ethnographically known chiefdom may be a product not of chiefdom-level organization but of influence from a state-level polity. In particular, if the goal is to acquire data for use in comparison with precolumbian chiefdoms (as it is here), we must be careful to filter out distorting colonial influences. Given the immense changes of the modern era, this task is difficult, but it is not impossible. Many chiefdoms were recorded ethnographically before major disruptions occurred; some (such as Kiriwina) even continue relatively unscathed to the present (Weiner 1988).

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[1] By the end of the nineteenth century, however, further influence in the form of British colonial presence had resulted in a transformation to state-level political organization (see Gullick 1987).

Some Comments on Terminology

I have identified the groups included here as chiefdoms, based on my definition (see Chapter 1). As noted in Chapter 1, I use the terms "chief" and "chiefdom" in very specific ways. The same cannot be said of the many sources I consulted. In these sources, the entities called chiefdoms here are variously called tribes, kingdoms, nations, or states. Their leaders are chiefs, kings, rajas, and sultans. These terms, by their connotations, prejudice the reader regarding the political nature of the polity and may cause considerable confusion.

In the following discussion of the 30 chiefdom areas, I have standardized the terminology relating to polities and their leaders except in occasional direct quotations. The reader should not view terms such as "king" or "sultan" or the characterization of the polity as a "tribe" or "state" by the original recorder as indicative of the polity's political complexity.

The Availability of Data on Capitals in Chiefdoms

Ideally, an archaeologist studying chiefly capitals would wish for a quantitative study of the characteristics of capitals (including such features as number of houses, population, area, dimensions of chief's house compared to ordinary houses, and so on). Two factors restrict the ability to conduct a quantitative study of the characteristics of chiefly capitals. One is the (statistically) small number of ethnographic chiefdoms in the sample. Although the 30 chiefdom areas surveyed represent a sizable proportion of those areas for which adequate data are available, the sample is too small to be able to draw meaningful statistical conclusions.

The second factor concerns the paucity of specific quantitative data on characteristics of capitals. So, for example, while recorders often remark on the size of a capital in general terms, the number of structures and even population are noted only occasionally. One size characteristic particularly useful to archaeologists--area--is completely absent in accounts of the 30 chiefdom areas.

Although specific quantifiable data are few, careful readings of accounts of the 30 areas reveal considerable descriptive information about chiefly capitals. Many ethnographers, especially the British social anthropologists working in Africa from the 1930s to the 1950s, recorded data on political structure. In so doing, they provided, though often indirectly, data on the material characteristics of capitals.

The database thus lends itself to a qualitative rather than a quantitative cross-cultural analysis. In the following sections, a synthesis of data on the size and shape of capitals in chiefdoms is presented.

Size of Capitals

Writers describe the chief's village or capital as the largest in the chiefdom in 20 of 30 cases (see Table 2-2). Unfortunately, more specific information about the size of the capital (e.g., population, number of houses, area) and its size relationship to other villages is rarely provided. Nonetheless, the assertion that *the capital is a chiefdom's largest settlement* is an important one because it provides a measure by which to identify capitals archaeologically. Let us look more closely at this statement.

Why should the capital be the largest settlement in a chiefdom? First, the capital is the residence of the ruler, and the ruler's immediate family is often larger than the average family, especially in polygynous societies. The ruler typically uses

Table 2-2. Size of Chiefly Capitals (based on population or number of houses).

Capital is Largest Settlement	Capital is Not Largest Settlement	Insufficient Data on Size of Capital
Direct evidence: Apalachee Taino Tapajos Nabdam Mandari Alur Ovimbundu Bemba Yao Swazi Zulu Western Malays Kiriwina Tikopia Palau Kosrae Tonga *Indirect evidence:* Natchez Comogre Bamileke Ila	–	Powhatan Calusa Omagua Basseri Kachin South Nias Islanders South Sulawesi Pohnpei Tahiti

marriage to create alliances with other high-ranking families both inside and outside his chiefdom (Buxton 1963:68; Errington 1989:279; Gullick 1965:86; Leach 1965:205; Southall n.d.:82-83; Weiner 1988:105). Consequently, the chief frequently has more wives and children than ordinary men. Often, as in Kiriwina, the privilege of polygynous marriage is restricted to those of high rank (Weiner 1988:105). Moreover, distant family members may settle nearby to take advantage of being related to the ruler (Richards 1972:109; Riesenberg 1968:66). In addition to relatives, the leader's

household often contains servants and slaves which increase the size of the capital (Gullick 1965:64; Southall n.d.:77).

Second, in chiefdoms, the political, economic, and religious realms are inseparable. The capital is, therefore, the center of all these realms. People directly involved in centralized political, economic, or religious activities tend to live nearby. The chief's councillors, for example, may live close by to facilitate communication with the chief (Richards 1972:110; Southall n.d.:77). Moreover, people wishing to benefit politically, economically, or religiously are drawn to the capital. In particular, the poor and the ambitious are attracted by the prospect of support, wealth, or advancement (Gullick 1965:64; Southall n.d.:77). Physical nearness to the chief puts them in position to attain any or all of these.

It should be noted that though the capital is attractive to followers for the reasons given above, living nearby also has higher costs. Those close to the chief are called on more often to perform service for and provide tribute to the chief (Southall n.d.:88). Proximity to the chief means that rivals have less chance to develop followings and create their own power bases. Nevertheless, the attraction of the capital is strong enough to offset its contradictory repellent forces, particularly for those who have little likelihood of developing their own power bases.

The attraction of the political capital is apparent even in modern nations where political, economic, and religious functions are often separated. In the world today, the political capital is commonly the largest settlement in a polity. North Americans may not immediately recognize the validity of such a statement because it is not true of either the United States or Canada. The North American situation, however, is highly unusual. Some figures taken from *The World Almanac and Book of Facts 1992*

(World Almanac 1992:734-821) show just how biased a view based on a North American perspective is. For example, 15 (75%) of the 20 largest cities in the world are current or former national capitals. The remaining 5 (25%) are current or former regional capitals.

Viewed another way, 137 (87.2%) of 157 world capitals are the largest cities in their countries. An additional 11 capitals (7.0%) are the second largest cities. This means that an astonishing (at least to a North American) *94.3% of world capitals are the first or second largest cities in their polities.* Only nine capitals (5.7%) are not the first or second largest cities. These are almost all artificial creations (e.g., Brasilia, Canberra, and Washington), recently moved capitals (e.g., Belmopan, Belize and Islamabad, Pakistan; the former capitals were the largest cities), or capitals of confederations of states (e.g., Brasilia, Canberra, Washington, Ottawa, New Delhi, and Bern) or some combination (cf. Renfrew and Level 1979:146).

As has already been noted, modern national capitals are less likely than chiefly capitals (because of the separation of political, economic, and religious activities) to be the largest settlements in their polities. The very high proportion of modern capitals which are, in fact, the largest settlements (87.2%) suggests that chiefly capitals may be expected to be the largest settlements in their polities at least 90-95% of the time.

The data from the chiefdom survey, though limited, support this expectation (Table 2-2). In *all* areas for which information exists regarding the size of the capital, the capital is the largest settlement. There are *no* cases in which the capital is not the largest settlement. Given this body of evidence, we may safely conclude: *In a chiefdom, the capital is the largest settlement in the polity.*

As definite as this seems, applying this information to the interpretation of archaeological data requires some care. To begin with, all the data above are based on population figures. The largest settlement is the settlement with the largest population. Population information, of course, is not immediately available to archaeologists, but it can be derived indirectly from material remains such as number of houses.

The settlement with the largest population is not necessarily the settlement covering the largest area. Consequently, archaeologists tempted to estimate size based on the area covered by a site should exercise caution. Factors such as dispersed or compact settlement and chronologically distinct living areas may distort interpretations of site size.

Moreover, identifying the largest site in a polity is entirely relative. This can be done only within the context of a knowledge of the entire range of site sizes and of the boundaries of the polity. Identification of one seemingly large site as a capital is thus unreliable in the absence of reasonably thorough settlement pattern data.

Finally, the archaeological record may present a confusing picture, revealing perhaps more than one site that appears noticeably larger than ordinary sites. Such unclear data may indicate periodic re-location of the capital (a typical pattern in chiefdoms) or the presence of more than one level of administrative leadership. Clearly, a good grasp of the local chronology will help in sorting out problems like these.

Size, of course, is only one factor in identifying chiefly capitals. Equally important, especially for archaeologists, is the structure of sites--constructions, spaces, and their arrangement across the landscape.

Structure of Capitals

Capitals differ from non-capitals not only in size, as seen in the previous section, but in structure. In this section the structural elements of capitals are explored.

In the first part the disposition of these structural elements across the landscape is examined, followed by a consideration of the importance of orientation. Then, individual components are taken up in turn, including the chief's house, the chief's storage facilities, religious structures, communal structures, public spaces, and walls. Finally, the issue of monumental architecture is addressed; monumental architecture is an infrequent feature of ethnographic chiefdoms but one which bears heavily on the subject of this study.

Layout

Several factors affect the form of a settlement (both capital and non-capital). The first is the type of adaptation to the environment. Many of the areas in this survey, for example, exhibit a dispersed form of settlement (11 cases). This is undoubtedly due to reliance on small-scale, family-run agriculture. Conversely, some agricultural settlements may be clustered because crops grown or the method used requires cooperation among families or use of large fields for efficient production (e.g., among the western Malays). In the cattle-herding areas of Africa, the need to contain livestock often results in a circular settlement plan with structures built around the livestock pens (e.g., Ila, Swazi, Zulu). If the ocean, a river, or a road play an important part in the economy, the settlement may be laid out to maximize access and so may take on a linear form (e.g., Tikopia, Tapajos, some Yao).

The second factor that influences settlement form is the need for defense. Some settlements, even agricultural ones which might be more efficiently located in a dispersed pattern, are clustered for protection (e.g., western Malays, South Nias Island). Others, having retreated to hilltops or mountain ridges for security, may adjust to the physical configurations of the setting. So, for example, Ovimbundu villages located in the plains tend to be circular, but those situated on mountain ledges (due to an earlier need for defense) tend to be linear (McCulloch 1952:25).

Historical factors also affect the form of settlements. A vivid example of this comes from the Micronesian island of Palau. During the Japanese colonial period (1914-1944) on Palau, the traditional layout of Ngiual (a capital) gave way to "the linear pattern of a rural Japanese village" (Parmentier 1987:58). The influence of colonial rule thus resulted in a restructuring of the settlement's layout.

The plan of a capital differs from that of an ordinary settlement in several ways. First, as shown in the last section, a capital is larger and may thus have a more complex form. Second, a capital contains components not found in ordinary settlements (e.g., chief's house, chief's storage). These unique components, as will be seen in later sections, often form the focus of a capital and are set off in some way from the ordinary elements. Third, in areas where the general form of settlement is dispersed, the capital may be more clustered and take on the characteristics of a "town" (e.g., Tonga, Bamileke, Apalachee). Fourth, in areas with foreign influence, a capital may take on a new form (as in Ngiual) while ordinary settlements retain traditional layouts.

In addition to differences, there are also similarities in the plan of a capital and that of an ordinary settlement. Apart from the cases noted above, the plan of a

capital usually takes the same shape as that of other settlements in the polity. If the typical form is circular, as in Kiriwina, for example, the capital is circular (Malinowski 1935:24). If the ordinary settlement plan is amorphous, as it is among the Nabdam, the plan of the capital is amorphous (Archer 1971:49-50).

Clearly, many factors influence the layout of settlements. As a result, obvious differences in layout between sites should be viewed cautiously to avoid interpreting environmental or defense-related factors as political ones. Moreover, characteristics relating to the difference between capital and non-capital (higher population, unique structures) may or may not be readily apparent in archaeological remains. In some cases identifying a capital may require nothing more than a broad knowledge of sites in a given area. In other cases, extensive research at several sites may be necessary to make a determination.

Orientation

The orientation of a capital (or of any settlement) may be symbolic (e.g., to the cardinal directions) or practical (e.g., to some feature of topography or weather). Should it be expected, given the high political and ritual symbolic nature of the capital in a chiefly society, that the orientation of a capital would have a strong symbolic element? Apparently not, or at least no more so than for ordinary villages.

This survey of ethnographic chiefly capitals found that orientation of capitals is generally similar to that of ordinary villages and most frequently depends on topography. Where information is available, capitals are oriented to features such as a river (Natchez, Powhatan, western Malays, Omagua, Tapajos), the beach or coastline (Tikopia, Palau), a ridge or hilltop (Kachin, South Nias, some Ovimbundu), or a road (some Yao).

A symbolic orientation is present in a few settlements, primarily in Indonesia (at least in this sample). On South Nias Island, for example, the siting of villages on hilltops had both practical and symbolic significance. The hilltop provided a good defensive position, but, more importantly, the slope of the hill acted as a physical manifestation of social rank (Fraser 1968:37). The higher one's house site, the higher one's rank. The chief's house, reached by a series of ascending terraces, loomed over all the others.

The equation of physical height with high rank occurs widely in southeast Asia and throughout Oceania. Errington (1989:66), for example, notes that in South Sulawesi

> "high" rank required literal high and central placement on ceremonial occasions. Even on non-ceremonial occasions, . . . to be polite, one must keep one's head lower than the head of the higher-ranking person in whose presence one finds oneself.

Other examples abound. In Kiriwina, at the turn of the century, the chief often sat on a raised platform so people would not have to stoop when passing him. If he happened to be sitting on the ground, passersby dropped to their knees and crawled by, or the chief stood up (Malinowski 1935:34, 84). In Tahiti, the paramount chief was carried about on the shoulders of a low-ranking subject (Ferdon 1981:38). In Tonga, in the eighteenth century, the paramount refused an invitation to dine with Captain Cook aboard his ship because descending to the captain's cabin meant that commoners would be above the chief's head (Ferdon 1987:24). Elevation thus carries a symbolic meaning in these parts of the world and probably in others as well (e.g., Natchez).

Presumably, symbolic orientation could also include orientation of a settlement to the cardinal directions. However, very little evidence was found in the survey for

this type of orientation. The north-south alignment of houses in South Sulawesi (Kennedy 1953:133) suggests an overall settlement orientation to the directions, but none of the sources for this area states this explicitly. An apparent orientation to the west among Ila villages in central Africa (see Figure 2-2) turns out, upon closer scrutiny, to be the result of sheltering the chief's house from the prevailing east wind (Smith and Dale 1920:109).

The lack of evidence for settlements (especially capitals) oriented to the cardinal directions is somewhat surprising. This lack may simply be a product of the small size of the sample. Or perhaps surprise at the lack reveals a modern or geographic bias. It is possible, although the evidence for it is not at hand, that state-level capitals are more likely to be oriented symbolically (including to the directions) as a result of increased dependence on authority by leaders to maintain their power. It is also possible that orientation to the cardinal directions is a characteristic typical of particular geographic areas--Asia, for example--and is less likely to occur in other areas. The lack of clarity should suggest caution in ascribing a directional (symbolic) orientation to a site if a practical orientation also exists.

Whatever the orientation, we should not expect an exact placement of settlements or of houses within the settlements. Sophie Clement-Charpentier (1989:149), in discussing modern non-capital Thai villages, notes that "...orientation may vary by a few degrees" from a defined pattern. Villagers, she says, "are accustomed to following rules, but they feel free to interpret them in their own way." This attitude very likely holds true in chiefly as well as non-chiefly societies and for inhabitants of capitals as well as for those of ordinary villages. So, even in capitals

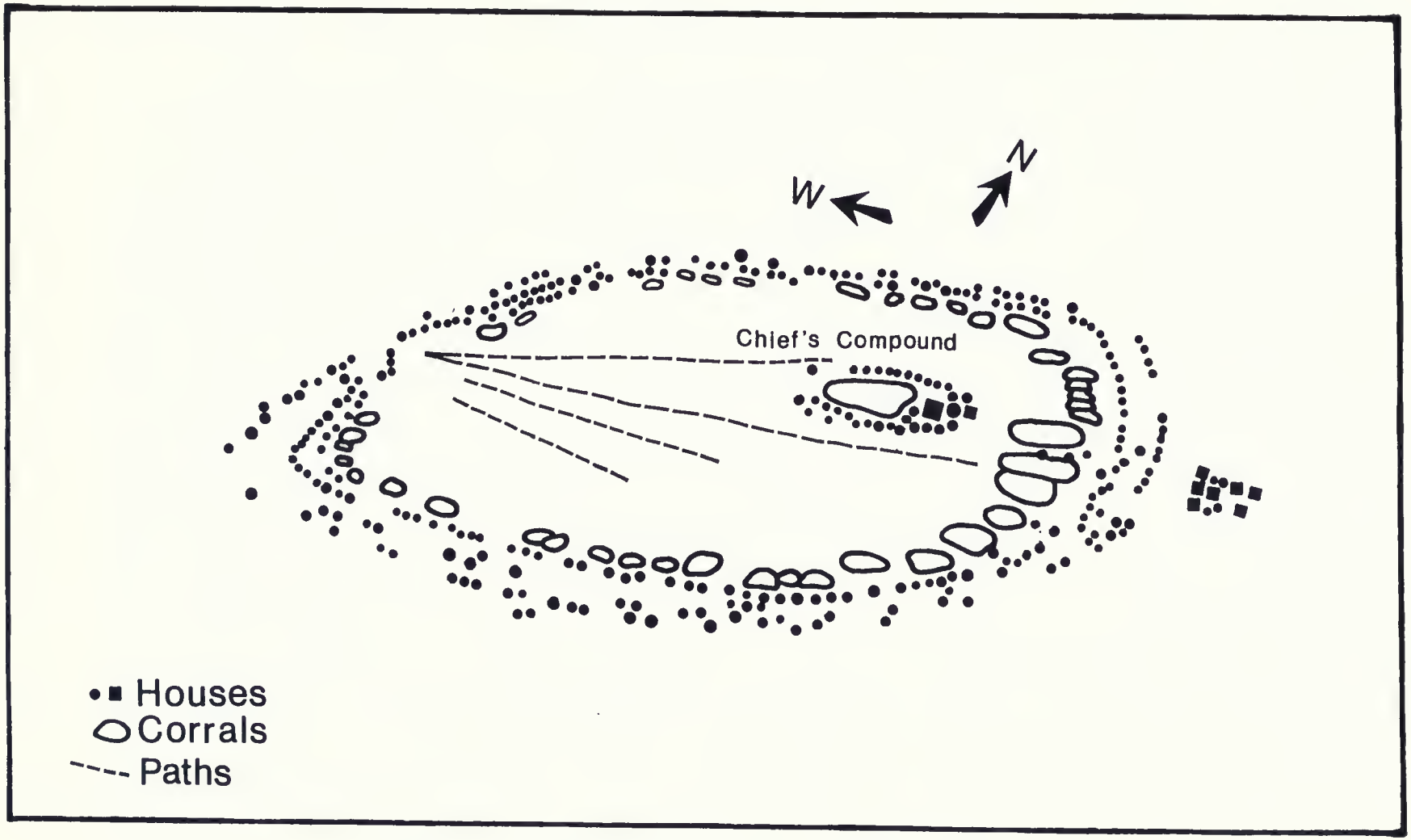

Figure 2-2. Oblique View of Ila Capital, Central Africa.

oriented symbolically, some degree of variation from the apparent norm should be expected.

In general, settlement orientation, as with layout, seems to depend on environmental and cultural features common to the area. The orientations of capitals and of ordinary villages are similar. Typically, settlements are oriented to some topographic feature. Symbolic orientations are rare.

Chief's House

The chief's house (or compound) is often immediately distinguishable to observers by its larger size, its elaboration or decoration, or its prominent location. Raymond Kennedy (1953:36-37), for example, singled out a large, striking house for attention while traveling in South Sulawesi (Indonesia) in 1949. Upon inquiry, an informant told him that the house belonged to the chief of Makale. Kennedy had recognized, consciously or not, exactly what the characteristics of the building were intended to communicate: this was the dwelling place of an important person, someone worthy of attention.

Similarly, an observer viewing a capital in plan can often pinpoint the chief's house quite easily by its size, shape, and/or location. Consider the Ila capital shown in Figure 2-2. The chief's compound is clearly identifiable by its greater size and central location. The chief's own house within the compound is further distinguished by its rectangular shape and large size. The chief's house is also readily identifiable in a plan of Omarakana, the capital of Kiriwina (Figure 2-3).

Size. In all chiefdom areas for which information was available (20 of 30 areas), the chief's house is larger than ordinary houses. In some cases, the layout of

the house is also more complex (Kachin, western Malays, Palau, Pohnpei, Powhatan, Nabdam, Alur under colonial influence).

One reason for the larger size of the chief's house or compound is the larger size of the chief's household. In addition, some chiefs' houses have functions that ordinary houses do not (e.g., they may serve as the settings for community-wide rituals [Kachin, South Sulawesi, Taino, Yao], as guest-houses for visitors [Kachin], or as the locations for the conduct of government [Bemba, Yao, Ila, South Nias, western Malays]). A large chief's house also demonstrates visually the chief's ability to command the services of a large work force and therefore reflects the amount of power the chief holds.

Form. In general, chiefs' houses have the same shape as ordinary houses. However, in a few cases (Tahiti, Tonga, Taino, possibly Pohnpei), the shapes of traditional chiefs' houses are described as different. Taino chiefs' houses, for example, were rectangular while ordinary houses were round (Wilson 1990:57). Conversely, Tahitian and Tongan commoners' houses were rectangular with rounded ends, but a handful of chiefs' houses were round or oval[2] (Ferdon 1981:72-73, 1987:21). In Pohnpei, an early visitor remarked that "the dwelling houses vary in size and in shape according to the taste and rank of the proprietor" (O'Connell 1972:125, cited in Morgan 1988:79).

Areas under foreign or modern influence show the most disparity between the shapes of chiefs' and commoners' houses (Alur, Nabdam, Ila). This disparity results from the chief's role as mediator between subjects and the outside world. Information

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[2] Most Tahitian and Tongan chiefs' houses, however, had the same shape as ordinary ones.

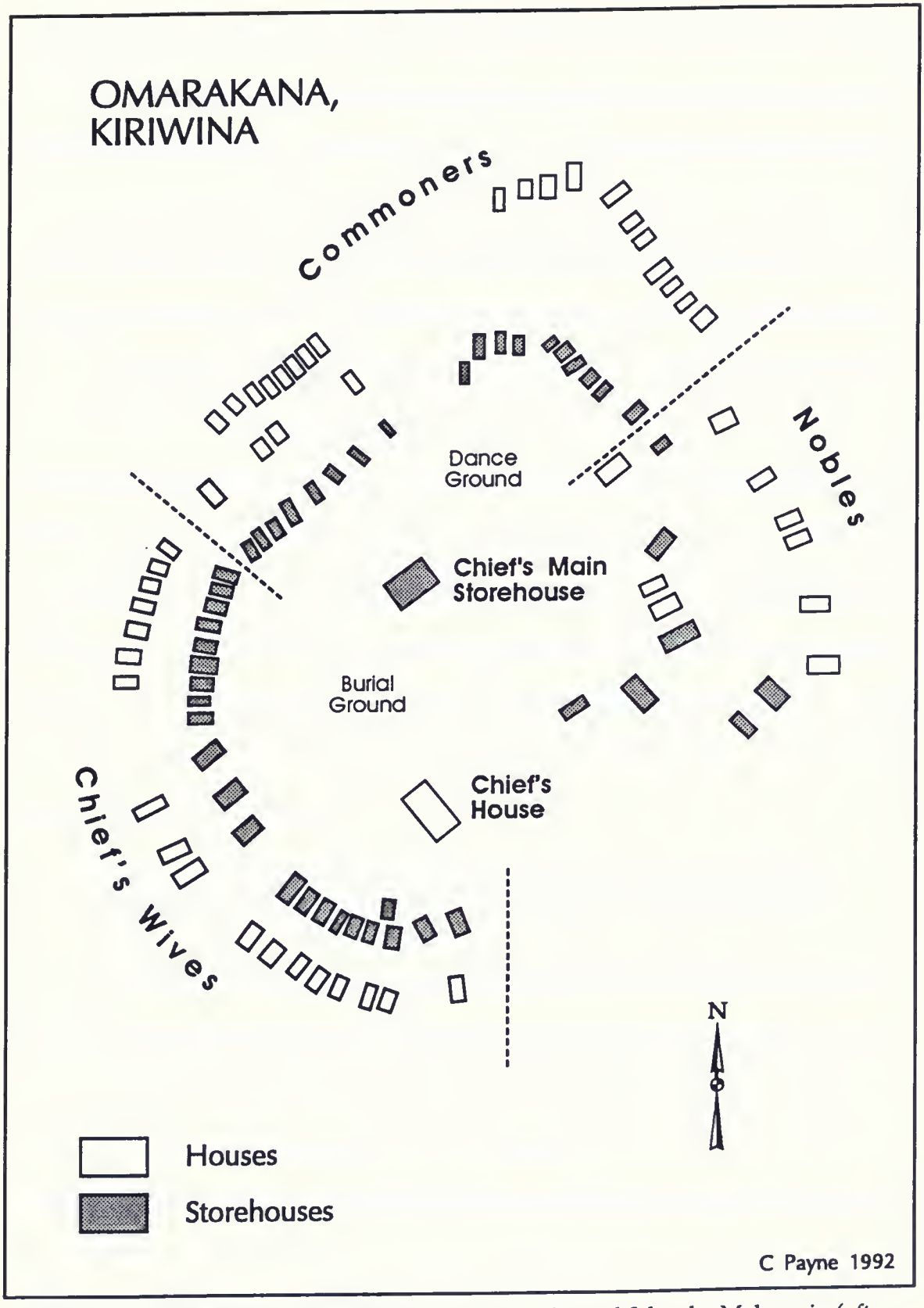

Figure 2-3. Omarakana, Capital of Kiriwina, Trobriand Islands, Melanesia (after Malinowski 1935:25).

or goods going in either direction are funneled through the chief (cf. Parmentier 1987:69). Chiefs, therefore, frequently acquire new products and adopt new styles before others in the polity. Consequently, rectangular Nabdam, Ila, and Alur chiefs' houses are built in European style of modern building materials. At the same time, ordinary houses continue to be built in traditional shapes (round in all three cases) of traditional materials (Archer 1971:50, 52; Light 1941:74; Southall n.d.:269-270, 303).

Decoration and elaboration. In this survey the chief's house is described as more elaborate or more highly decorated in ten cases. In five of those ten cases (Tahiti, Bamileke, western Malays, South Sulawesi, Kachin), such decoration or elaboration is specifically described as the exclusive privilege of those of noble rank. Among the western Malays, for example, the shape of a house's roof indicated the owner's rank. Only the three highest-ranking nobles were allowed a two-tier roof; houses of lesser nobles, however, could have concave roofs (Gullick 1965:112). In the Bamileke area, decorated door panels and door frames marked the houses of nobles (Littlewood 1954:98). In Tahiti,

> it was strictly a chiefly prerogative to have the rafters of the home wrapped with fine matting or the braided fibers from the husk of the coconut (Ferdon 1981:79).

Perhaps the clearest association of house decoration and rank comes from South Sulawesi. The number of flap-like decorations (*tipe-tipe*) hanging from the house's gable communicated the owner's rank (Kennedy 1953:108-109; Errington 1989:80). In Luwu, for example, three *tipe-tipe* indicated the house of a ruler. The number of gable flaps which signified high rank varied from area to area--south of Luwu in Bone, rulers had up to seven--but the correlation of the highest rank with the greatest number remained constant.

Shelly Errington (1989:80) describes an even more visible indicator of rank in South Sulawesi--the form of access to the raised houses of the area. She records five types of access, each symbolic of a higher status than the one before: a ladder, an uncovered stairway, a stairway covered with a flat roof, a stairway covered with a pointed roof, and a stairway covered with a pointed roof and having one or more landings. Errington's description of an informant's house in Luwu as having "three tipe-tipe and an elaborate covered stairway with two landings" thus indicates--even without her confirmation--that the house belongs to "very high nobles."

In South Sulawesi the connection between house decoration or elaboration and rank is stronger than that between house size and rank. "Large size in itself," says Errington (1989:80), "does not indicate higher status, merely wealth. Higher status is indicated instead by elaboration of spaces and of decoration." The visibility and symbolic nature of these house features may explain why Raymond Kennedy unerringly singled out a chief's house for consideration in the example cited at the beginning of this section.

Construction materials. In nine cases, construction materials of chiefs' houses are described. In eight of these, materials used in building the chief's house are different (i.e., more desirable or stronger). Mary Helms (1979:9), for example, describes Comogre chiefs' houses as built of timber with stone walls while ordinary houses were made of canes plastered with clay. As noted earlier, in instances where chiefs' houses take a foreign or modern form, building materials are also usually modern, though traditional construction materials may continue to be used in commoners' houses. In most chiefdoms the difference in construction materials is not this great. In Pohnpei, for example, the chief's house is built of breadfruit wood and

hibiscus wood, while ordinary houses are made of mangrove wood (Riesenberg 1968:67). And Powhatan chiefs' houses differed from ordinary ones in having a covering of bark rather than one of marsh reed mats (Rountree 1989:60-61).

Location. Finally, the position of the chief's house may be marked in some way. In 12 of the 13 cases where location is determinable, the chief's house stands in a prominent location. Prominence is expressed in one or more of three ways: (1) separation from commoners' houses; (2) central location; or (3) elevated placement.

Segregation of the chief's house may be accomplished with fences or walls (Kachin, Zulu, Swazi). Or it may be created by surrounding the chief's house with more space than is usual (Kiriwina, Tikopia, Ila). In Kiriwina, for example, public and ritual spaces surround the chief's house (Malinowski 1935:25, 431). These spaces include some areas where access is controlled by the chief.

The chief's house may also be distinguished by a central location (Mandari, Ila, Kiriwina). In the two plans of circular capitals illustrated earlier in this chapter (Figures 2-2 and 2-3), the chief's house is positioned in the center of the circle rather than among the rows of houses.

Chiefs' houses may also be marked by elevation (Natchez, South Nias, Palau). As noted earlier, the equation of physical height with high social/political rank occurs in several parts of the world. Chiefs' houses may thus be placed higher than commoners' houses to demonstrate to both subjects and visitors the chief's high rank and authority. The Natchez chief's house, for example, stood on an artificial earthen mound (Le Page du Pratz 1975:338). South Nias capitals were laid out to take advantage of natural hill slopes; the chief's house was situated at the highest point in the village (Fraser 1968:37).

Comments. The chief's house is thus distinct from ordinary houses in several material ways: greater size, prominent location, and more and/or better decoration. The chief's house may also differ in form or construction material, especially in areas with foreign influence.

This distinctiveness is not only material. In several areas, the chief's house is distinguished linguistically. At least six areas (Pohnpei, Kachin, Tikopia, South Nias, Alur, and western Malays) and possibly one other (Taino), have a special word or phrase for "chief's house." This linguistic distinction emphasizes the unique nature of the structure. The chief's house is not merely any house that the chief happens to live in; it is a definable, recognizable structure that falls into a different category altogether from ordinary houses.

The physical characteristics of the chief's house communicate both the power and authority of the chief. The large size of the structure provides a visible indicator of the size of the work force the chief can command, and the use of different construction materials indicates the chief's control of resources not available to the general populace. The chief's house is "a concrete representation of aristocratic political power" (Waterson 1989:485).

Greater decoration or elaboration conveys both power and authority--power in the form of the ability to command the labor required to create better decoration and authority in the form of the right to use symbols restricted to use by individuals of high rank.

Location also communicates authority because it illustrates the chief's right to (and the population's acceptance of) a special place in which to build his house.

House decoration and location express an authority primarily based on social rank (in contrast to authority based on religion, for example).

Recognizing a chief's house in the archaeological record. Ethnographically, the best indicators of a chief's house are size, location, and decoration. Chiefs' houses are larger, prominently located, and frequently have elaborations or decorations available only to nobles. The last of these indicators, decoration, is not often available to archaeologists for study, so the identification of chiefs' houses in the archaeological record relies primarily on size and location data. Because these data are relative, the archaeologist should have a fairly good body of information on structures of all kinds from a capital before making inferences.

An unusually shaped building or evidence for different construction materials is not, in itself, adequate or necessary for the identification of a chief's house, but either may serve as useful support for other forms of evidence.

One last caveat--a chief's house shares some size or locational characteristics with chiefs' storage facilities, communal houses, and religious structures. The following sections contain data which will help the archaeologist in distinguishing among these structures.

Chief's Storage Facilities

Storage in chiefdoms. Over-production of subsistence products in good years accompanied by storage of the excess for use in bad times often forms a part of a chiefdom's subsistence strategy. In areas of year-round plenty (e.g., Palau), such measures may be unnecessary and storage structures non-existent (Barnett 1960:27), but for most chiefdoms, storage of food products plays an important role in staving

off recurrent shortfalls. Storage structures in these cases may be prominent parts of the landscape of settlements.

Periodic shortages exist and must be counteracted because of the nature of subsistence in chiefdoms. As populations become denser, gathering-fishing-hunting strategies become impractical, and the subsistence base is eventually intensified (Johnson and Earle 1987:16). This intensification usually takes the form of agriculture, but may also occur as livestock herding or fishing. Intensification results in reliance on fewer staples, thus opening up the population to greater threat in times of shortfall.

Storage of excess produce, at the local level or at the polity level, is one way to lessen the impact of shortages. Local-level storage acts as a buffer for small groups, but, for the whole polity to prosper, centralized storage is necessary. Centralized storage averages out the effects of bad harvests over the entire population, minimizing the impact on the society as a whole. The chief thus acts as a "banker" (Johnson and Earle 1987:223), with subjects sending in foodstuffs (tribute) in good times and expecting the chief to feed them in hungry times. The chief carries out this duty by holding periodic ceremonial feasts, by feeding corvee workers, and by taking into his household individuals unable to support themselves (Barth 1961:101; Buxton 1963:73; Errington 1989:113; Gullick 1965:107-108, 1987:51; Hann 1988:209; Helms 1979:14; Leach 1965:112; Parmentier 1987:68; Richards 1939:147, 246; Southall n.d.:78-81).

Given the importance of the distribution of food by the chief, it might be expected that chiefly storage facilities will be different from ordinary structures. And,

in fact, this is what happens. Before exploring these differences, let us look at the types of storage structures we might expect.

Types of storage facilities. Storage facilities take different forms depending on subsistence requirements. These forms fall into two categories and possibly a third. The first and most common facility is storage for agricultural produce. Frequently, these facilities are freestanding structures devoted specifically to storage, e.g., rice barns (South Sulawesi), yam houses (Kiriwina, Tonga), corn cribs (Natchez), or millet granaries (Alur, Bemba). However, in two cases, produce is stored directly in the chief's house (Comogre, Nabdam). In two other areas, goods are stored in a religious structure (Ovimbundu, Powhatan).

The second type of facility is "storage" for livestock, i.e., pens or corrals. This type occurs primarily in Africa where there are many chiefdoms based on cattle herding (e.g., Mandari, Ila, Swazi, Zulu). In south Africa, cattle pens or *kraals* are prominent central features of homesteads and villages.

A third possibility (although only two vague references to it were found) is "storage" for aquatic livestock--fish ponds (South Sulawesi) or turtle pens (Omagua). Such structures might be expected in chiefdoms with maritime or riverine subsistence bases. However, few such chiefdoms are documented, so it is difficult to say what the likelihood is for such structures.

Size. When storage facilities are separate structures, they may be either larger or smaller than residences. Bemba granaries, for example, are smaller than dwellings (Richards 1939:Plates 1 and 3), while Kiriwina yam houses are larger (Malinowski 1935:229). Livestock pens, of course, are invariably larger in area than residences (Ila, Swazi, Zulu) (see Figure 2-2).

In this sample of chiefdoms, only six cases provide data on the size or number of chief's storage structures compared to those of ordinary storage structures. It is noteworthy, however, that in each of these six cases, the chief's storage is *larger or more numerous* than ordinary storage.

Sometimes the difference is substantial. The household of the chief of Kiriwina contains 23 yam houses (Malinowski 1935:25). An ordinary Kiriwinan household has only one, at most (Weiner 1988:91-92, 105). Moreover, the chief's personal yam house is larger than all the others (see Figure 2-3). This is not surprising in light of the fact that Kiriwinans view yam houses not only as symbolic of power but as literal sources of power (Malinowski 1935:229).

Bemba chiefs also maintained large storehouses. Audrey Richards (1939:85) found that the average capacity of an ordinary Bemba granary is 661 cubic feet. "Chiefs' granaries," she says, "are bigger, and the four I measured had a capacity more than four times this size."

An even more striking example comes from the nineteenth century Zulu (Biermann 1971:99). Although sizes of ordinary cattle *kraals* are not given, a chief's *kraal* is described as being more than one mile in diameter, surely an extraordinary size. This enormous *kraal* existed primarily as a demonstration of the chief's wealth and power. Though nominally the place where the chief's cattle were kept, the *kraal* was actually used for gatherings of warriors. The cattle were kept in smaller *kraals* around the edges of the big one.

Location. In looking at the location of chiefs' storage facilities, the problem again arises that only a few cases provide adequate data. But as with size and number, a clear pattern emerges despite the limited information. In six of the eight

cases where this information is noted, the chief's storage is in or near the chief's house.[3] This finding is entirely predictable because storage facilities in general are located near their owners' residences (Southall n.d.:41; Smith and Dale 1920:112-114; Richards 1939:84).

That the chief's storage is likely to stand near his residence means that it, like his house, occupies a prominent place in the settlement. This is vividly illustrated by the central and isolated positions of the cattle pen of an Ila chief and the personal yam house of the chief of Kiriwina (Figures 2-2 and 2-3).

Comments. Clearly, considerable variation exists in storage facilities across chiefdoms. To begin with, several types of storage occur: (1) agricultural produce storehouses; (2) livestock pens; and, possibly, (3) containment for aquatic resources. Variation in size of the storage facility compared to the size of residences also exists. Some stores are smaller than houses (e.g., Bemba); some are larger (e.g., Kiriwina, Ila, Swazi, Zulu). These variations depend largely on subsistence requirements, including what types of food are being stored and the general productivity of the area.

Conversely, there are also patterns of similarity: (1) chiefs' storage facilities are larger or more numerous than ordinary storage, and (2) chiefs' stores are sited in prominent locations. However, both these patterns are based on very limited information, so we may legitimately ask whether they will hold true if more data are acquired. Most likely they will.

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[3] The two exceptions are Powhatan where goods were stored in a religious structure outside the capital (Rountree 1989:133) and Natchez where a communal corn crib was erected near the fields outside the capital (Le Page du Pratz 1975:339).

The chief's stores will probably be larger than ordinary stores (in chiefdoms where storage is a necessity) due to the worldwide obligation of chiefs to feed people. This obligation is specifically stated in 10 of the 30 areas and is indirectly expressed in the fact that chiefs have larger than average households in 12 of the 30 areas.

Chiefs' storage facilities will probably be located in a prominent position in the capital, near the chief's residence. This siting is partly a matter of practicality and ease of access and partly a matter of the store symbolizing the chief's wealth and power. One exception has relevance for this study: the Natchez build a communal corn crib outside the capital (Le Page du Pratz 1975:339). It is not clear whether other Natchez storehouses exist.

Interpreting chiefs' storage facilities in the archaeological record. Care must be taken in using this information to interpret archaeological sites. As with the chief's house, the data are relative. Storage facilities vary in size from area to area, and absolute size cannot be used to identify chiefs' stores. Only by recording large numbers of storehouses and interpreting the resulting pattern can chiefs' storehouses be identified with any accuracy.

Religious Structures

What do religious structures look like in chiefly capitals? It has been shown that chiefs' houses and often chiefs' storage facilities are larger and more prominently located than ordinary houses. Should the same be expected for chiefly religious structures?

Certainly this is a reasonable expectation given that leadership in chiefdoms is generalized rather than specialized and that the chief invariably fills the triple roles of political, economic, and religious leader. Because the structures (chief's house and

chief's storage) representing the political and economic roles of the chief are larger, it might also be expected that religious structures, representing the third aspect of the chief's generalized power, should be large and conspicuous.

This expectation is not borne out. Religious structures in chiefly capitals vary greatly in their nature, size, and location.

The nature of chiefly religious structures. Sites of ritual occur in several forms (see Table 2-3). These include open-air sites (either natural or specially constructed), buildings, shrines (either freestanding or within a larger building), and miscellaneous types such as burial mounds. In a few cases, rituals are carried out in the chief's house. Sometimes more than one type of religious structure appears in a chiefdom (Kachin, Ovimbundu).

Table 2-3. Forms of Religious Structures.

Open-air	Building	Shrine	Other	None
Mandari Kachin Kiriwina Tahiti	Powhatan Natchez Apalachee Calusa Bamileke Ovimbundu Yao Western Malays	Alur Ovimbundu Ila Bemba South Nias Palau Kachin	*burial mound* Kosrae Tonga *rituals carried out in chief's house* Swazi Taino? Comogre? South Sulawesi Kachin	Nabdam?

These forms are typical of ordinary settlements as well as capitals. There is no distinction between the nature of capital religious structures and ordinary ones.

Ancestor worship. Inheritance and social rank are fundamental legitimate bases of chiefly power in chiefdoms of all sizes. It may be supposed then that reverence for ancestors, especially chiefly ancestors, will play an important part in rituals in chiefdoms. This supposition is borne out. Nearly half the 30 areas (13 cases) had religious structures devoted to ancestor worship. In ten cases, ancestor shrines actually held ancestral bones.

In a chiefdom where ancestor worship is practiced, chiefs' ancestors take on significance beyond significance to the chief's lineage. Chiefly ancestors often represent the polity's ancestors. Frequently, "a chiefly ancestor shrine . . . has a political focus" as it does for the Alur (Southall n.d.:92). At Alur chiefs' shrines, a new chief is installed, rainmaking and first fruits rituals are carried out, and rituals expressing the loyalty of clan heads and sub-chiefs to the chief take place (Southall n.d.:92).

Size. Sizes of religious structures vary considerably as is indicated by a comparison of the sizes of religious structures to those of chiefs' houses for each area (see Table 2-4; excluded from consideration are structures situated within the chief's house). In five of the thirty cases, the religious structure is smaller than the chief's house. Shrines, for example are invariably small; Alur chiefs' shrines measure barely four feet in diameter (Southall n.d.:99), and Ila ancestor shrines are "miniature huts" (Smith and Dale 1920:113).

In five other cases, we find religious structures that are the same size or larger than the chief's house. Further, extraordinary effort is evident in the construction of some religious structures (six cases). The Natchez "temple," for example, stood on top

Table 2-4. Sizes of Religious Structures.

Smaller than Chief's House	Same Size or Larger than Chief's House	Extraordinary Effort Expended
Bamileke	Powhatan?	Powhatan
Alur	Natchez	Natchez
Ila	Calusa?	Calusa
Bemba	Kosrae	Yao
South Nias	Tahiti	Kosrae
		Tahiti

of an eight-foot-high mound (Le Page du Pratz 1975:338), and Tahitian *maraes* were constructed of considerable amounts of stone (Ferdon 1981:54-55).

Little correlation exists between size of religious structures and complexity of chiefdoms. Small religious structures, for example, occur in chiefdoms at varying levels of complexity. Large religious structures, however, appear only in typical or maximal chiefdoms. No large religious buildings are recorded for minimal chiefdoms.

Location. The location of a capital's religious structure is unpredictable. There is perhaps a slight tendency for it to be sited in the chief's house (four cases) or near it (three cases) . However, two cases occur where the religious structure is *outside* the capital (Powhatan, Bemba). In four other cases, the religious structure is described only as being in the capital.

Comments. Religious structures may be buildings (e.g., church, temple, mosque), shrines or monuments (e.g., Tahitian *marae*), open spaces, or natural features (e.g., Mandari "meeting tree"). Many are devoted to ancestor worship.

Religious structures range from small and inconspicuous (Alur chiefs' shrines) to large and prominently located (Tahitian *marae*). In general, in small chiefdoms, the

religious structure seems to be smaller and less prominently located than the chief's house. In some larger chiefdoms (e.g., Natchez, Tahiti) the religious structure is a very visible and impressive part of the capital. However, small religious structures also occur in larger chiefdoms (e.g., Bemba shrines). In chiefdoms of varying sizes, the religious structure may be within the chief's house.

A religious structure is often located near the chief's house (e.g., Tikopia *marae*); sometimes it is even a part of the chief's residence (e.g., Kachin *madai dap*). This prominent location is by no means inevitable, however; some religious structures even stand outside the capital.

What is to be made of this general lack of patterning? Why should religious structures be exempt from the general equation of chiefly structures equals large size and/or prominent location? The lack of pattern makes sense if considered not in terms of the generalized political, economic, and religious aspects of the chief, but in terms of power and authority.

To help explain this, it is necessary to consider power and authority and how they are manifested in the built environment. As noted earlier, power is expressed by constructions requiring large amounts of labor. The chief thereby demonstrates ability to mobilize large work forces, thus advertising his large following--and people are power. The chief's house and storehouse are mainly representative of *power*--an ability to call up labor to build the structures and to demand tribute to fill the storehouse.[4]

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[4] The chief's house, by its decoration or elaboration, of course, may also express a source of authority--social rank.

Religious structures, however, are physical manifestations of one source of legitimate power or authority (divine support). Size or effort expended (characteristics of power) may not necessarily therefore be factors in their construction. If the chief's authority derives from sources other than religion (e.g., tradition, social rank), the religious structure may be relatively inconspicuous. If, however, religion plays a large part in the legitimation of the chief's power, as it often does in more complex chiefdoms, the chief might seek to demonstrate both power and authority by building magnificent religious structures.

The role religion plays in the legitimation of a chief's power depends partly on the size of a chiefdom and partly on historical factors. In a small simple chiefdom, the chief's power may need little legitimate support beyond his own competent management of that power and his social rank. Religious structures in these cases may be relatively inconspicuous.

If the chiefdom grows, the chief may find it more difficult to manage competently because of the greater complexity. Similarly, if stress occurs (several years of bad crops, for example), the chief's leadership abilities may be called into question. In either case, challenges to the chief's power increase. These challenges lead the chief to shore up power with enhanced authoritative claims or actions (cf. Cohen 1988:19). Claiming the support of deities is an excellent way to do this. Advertising this support by the construction of conspicuous religious structures communicates to the followers and potential challengers an increased legitimacy (divine support). The nature of religious structures thus gives us information about the dynamics of political power and authority. Large elaborate structures may suggest some sort of stress within the chiefdom (due, perhaps, to growth or economic

hardships) which is handled by concentration of power in the hands of the leader (centralization). Small structures suggest a polity in which stress is dissipated by other factors (out-migration, for example, or periodic fissioning of the polity).

Interpreting religious structures in the archaeological record. The lack of clear-cut patterning regarding religious structures should lead to caution when interpreting archaeological sites. Even in capitals, large and elaborate structures may not have had the "ceremonial" use often attributed to them. In fact, given the data provided by this survey, a large, ostentatious, prominently located building is far more likely to have been a chief's house than a religious structure. This is not to say that large religious structures do not occur. They do, particularly in larger chiefdoms. But their presence has more to do with the fluctuating interactions of power and authority than with the complexity of the chiefdom.

Communal Structures

Communal structures, particularly men's houses, frequently function as settings for the conduct of government in ordinary villages in both egalitarian societies and chiefdoms (see, for example, Barth 1965:53-56; Barnett 1960:32). In a capital, the chief's house often takes over this function; chiefs' houses also act as social gathering places for important people of the vicinity. Perhaps for this reason, communal houses occur infrequently in capitals, though they are not completely absent.

In 14 of 30 cases, communal structures are clearly or apparently absent. They are clearly present in only eight cases. These eight cases have a worldwide distribution (Apalachee, Bamileke, Alur, Ovimbundu, Bemba, Palau, Pohnpei, and

Tahiti). In two cases (Palau and Bamileke), and perhaps in others, more than one communal structure may be found in a capital.

Size. Only three cases provide data regarding the size of communal houses. In Palau (Morgan 1988:18-20) a communal house is apparently larger than the chief's house, but in Bamileke (Fraser 1968:Plate 1) and possibly Tahiti (Beaglehole 1955:129) the chief's house is larger. With mixed results and such a tiny sampling, it is impossible to draw any conclusion about what to expect in terms of size of communal structures in capitals.

Location. As with size, very little information exists regarding the location of communal houses, but this time the pattern is clearer. Where location is noted (four cases), communal structures are described as near the chief's house (Bamileke, Pohnpei) or centrally located (Palau, Apalachee).

Comments. Communal structures may or, more frequently, may not be present in chiefly capitals. When they are present, they are generally found in a prominent location near the complex of chief's house and chief's storage. Size is not now predictable; communal houses may be larger or smaller than the chief's house. Because there are few clear patterns regarding communal houses, archaeologists should exercise care in identifying them from the archaeological record. If small, these structures may be taken for residences unless they have a unique character. If large, they may be confused with chiefs' houses.

Public Spaces

Public spaces, like communal houses, are features of non-capital villages as well as capitals. Almost two-thirds (19) of the 30 areas yielded data about public spaces. For the remaining 11 cases, there was insufficient information to determine

the presence or absence of public spaces. In three cases (Apalachee, Taino, Bamileke), more than one public space may be present in the capital.

Public space is used for a variety of activities. Table 2-5 lists these activities for areas where this information is given. The majority of activities relate to ritual or government. The most frequently-cited function of public space is as a setting for the conduct of governmental business; the public space is often where the chief settles disputes and meets with advisors.

Table 2-5. Uses of Public Spaces.

Dancing (social or ritual)	Ritual Athletic Contests	Ritual Processions	Rituals in General	Conduct of Government	Ordinary Daily Activities
Powhatan Ovimbundu Kiriwina Tikopia Taino	Apalachee Taino Kiriwina	Calusa Zulu	Mandari Ovimbundu Kachin Tikopia Tonga	Mandari Alur Ovimbundu Bemba Swazi Zulu Kiriwina Palau Tonga Tahiti	Mandari Kiriwina

Condition. The condition or upkeep of public space is noted in four cases. In only one case is there mention of neglect: a Kachin public space, according to E.R. Leach (1965:117), "presents a desolate appearance" when not being used for ceremonies. In the other three cases, writers describe positive effort in the upkeep of public space: Palauans pave the space (Parmentier 1987:56), and the Taino and Mandari keep the public space swept and weeded (Wilson 1990:67; Buxton 1963:78).

Location. In eleven cases, the location of public space is determinable. In nine of these, the public space lies near the chief's house; in the other two, the location is described as "central." This central location is expectable in view of the stated ritual and political functions of public space.

Comments. The results seen above lead us to expect the presence of one or more public spaces in capitals and to predict that a public space will be prominently located, near the chief's compound. The presence of a public space should not, however, be used to identify a capital in the absence of other data, because many types of settlements contain public spaces.

Walls

Walls are sometimes a feature of chiefly capitals. Under the general term walls are included fences (ranging from flimsy screens to stockades), earthen embankments (possibly accompanied by ditches), stone walls of various sizes, and even mere visual separators (such as the low wall surrounding Tahitian *maraes* [Ferdon 1981:55]). Walls may be internal (within the confines of the settlement) or external (encompassing the settlement).

Walls are put up for a variety of reasons. These reasons may be grouped into two categories: symbolic/social and practical. Symbolic or social reasons include segregation of one part of the population from another, marking of social boundaries, definition of restricted areas, and communication of status. Among the practical reasons for walls are defense, security from wild animals, and containment of livestock.

Walls built for symbolic/social reasons are almost always internal walls (see Table 2-6), while walls with practical purposes are generally external.

Table 2-6. The Nature of Walls.

Internal			External		
Area	Symbolic	Practical	Area	Symbolic	Practical
Nabdam	–	–	Comogre	–	yes
Alur	yes	no	Nabdam	–	–
Ovimbundu	–	–	Ovimbundu	yes	yes
Ila	–	yes	Ila	–	yes
Yao	yes	–	W. Malays	–	yes
Swazi	possibly	–	South Nias	–	yes
Zulu	possibly	yes	Kosrae	–	yes
Kachin	yes	–			
Pohnpei	probably	–			
Kosrae	–	–			
Tonga	–	–			
Tahiti	yes	–			

Internal walls. Internal walls occur in 12 areas. In six other areas internal walls are clearly absent from the capitals. Internal walls are generally flimsy, incomplete, or otherwise inadequate as practical barriers. It should be no surprise then that in most cases where purpose was determinable, internal walls have symbolic/social significance rather than practical uses (see Table 2-6).

Among the Alur, for example,

> the chief's homestead is referred to as *kal* which means "fence." This refers to the fence of criss-cross elephant grass which only those of chiefly descent could use . . . . Neither the chief's nor any other Alur homesteads ever seem to have been highly fortified, and the *kal* was of purely symbolic importance (Southall n.d.:77).

In Pohnpei, a small structure within a two-to-three-foot high wall stood near the communal house. Behind this wall sat the highest ranking chiefs (Riesenberg 1968:68), separated symbolically from the populace.

In two cases where internal walls (fences) serve a practical purpose, they pen livestock (Ila, Zulu).

External walls. In contrast to the largely symbolic nature of internal walls, external walls, when present (seven cases) and the purpose is determinable, all have practical purposes (see Table 2-6), primarily defense against people or animals and holding of livestock. For example, stone walls, moats, or cactuses protected various Panamanian capitals from invaders or wild animals (Helms 1979:9). Similarly, among the western Malays, capitals usually had a stockade for defense against raiders and ditches that served both as defensive works and to prevent buffalo from wandering into the rice fields (Gullick 1965:29).

It is worth noting that the absence of external walls is far more frequent in the survey than is their presence. Nearly half the areas (14 cases) specifically lacked external walls. The absence of external walls probably results from the prevalence of a dispersed form of settlement in the 30 areas.

Comments. The survey indicates that archaeologists should not necessarily expect to find walls in chiefly capitals. When we do, we can predict that external walls serve a practical purpose while internal ones generally (though not invariably) have symbolic or social significance.

Bruce Trigger (1990:122) has suggested that greatly elaborated fortifications (beyond normal defense needs) displayed the power of the leader not only to his subjects but to invaders. The presence of fortifications thus gives us information on the nature of power in the chiefdom as well as on the particular historical situation.

The presence of internal walls may help in defining spaces reserved for nobles and thus yield data on the nature of authority in the chiefdom.

Monumental Architecture

Monumental architecture encompasses construction in which "scale and elaboration exceed the requirements of any practical functions that a building is intended to perform" (Trigger 1990:119).

What is the point of this unnecessary expenditure of effort? Simply stated, monumental architecture advertises the power of the leader who built it. Power, as seen in Chapter 1, is the ability of a leader to control the actions of others. The more people a leader can muster, the more powerful he is. People *are* power.

The power of a leader then can be directly measured by the number of his followers. This precept is clearly displayed in the chiefdoms of this survey, frequently in explicit statements. For example:

> [An Alur] chief's power depends ultimately on the number and size of his subject groups (Southall n.d.:188).
>
> [A Bemba] chief's reputation depends largely on the size of his capital (Richards 1972:110).
>
> Political power in the Malay States rested on the control of manpower (Gullick 1965:125).
>
> [In south Sulawesi,] a large kapolo [or following] formed the substance and source of influence . . . . To have "influence" and "power" in Western terms, in short, one needs someone to influence, and that was the kapolo (Errington 1989:102).
>
> [In Indonesia,] when a village is oppressed by its radja and wrongfully treated, the members leave and place themselves under the protection of a neighboring radja, who always receives them with open arms since they strengthen his power (Loeb 1935:38-39).

That people are power is recognized explicitly by followers themselves. The Mandari and Yao peoples both have maxims to that effect. The Mandari say, "He is no longer chief; a man without people cannot be so" (Buxton 1963:70). For the Yao, "a

chief who has no people is not a chief" (Mitchell 1956:109). A chief who ignores this precept will soon find trouble. An ancient Pohnpeian chief discovered this too late. Paul Riesenberg (1968:51) recounted the story:

> A chief who acted too unilaterally might come to grief. A [chief] in precontact times is said to have made numerous decisions without consulting his subjects, who rose and marched against him. He called upon his own clansmates to help, but he had alienated them too and they did not respond to his plea: finally, he was killed.

If a leader wishes to advertise his power (to foreign or internal rivals, for example), it follows that he will do it through some means that demonstrate his large following. This can be accomplished literally and directly by amassing large groups of people in his support (the masked processions of the Calusa or the huge gatherings of warriors of the Zulu). It can also be accomplished indirectly by acts which demonstrate the ability to mobilize a large labor force. The construction of monumental architecture falls into this latter category.

Monumental architecture in chiefdoms. In the survey sample, monumental architecture is present in eleven cases; it is absent in ten cases. Nine cases provide insufficient information to determine presence or absence.

Table 2-7 shows the way these data break down. In the survey, the size or complexity of a chiefdom seems to have little connection with the *presence* of monumental architecture, but there may be a slight tendency for monumental architecture to be *absent* more frequently in smaller chiefdoms than in large ones.

The survey results regarding the treatment of chiefs' houses (larger, more decorated, prominently located) and religious structures (sometimes small, sometimes large and prominent) lead to the expectation that monumental architecture in chiefdoms will be primarily associated with chiefs' houses. And, indeed, chiefs'

houses are monumentalized most frequently (6 of 11 cases), but religious structures run a close second (5 of 11 cases) (some areas have more than one type of monumental architecture). Other monumental structures also occur: communal houses (2 cases), walls (2 cases), and freestanding stones (3 cases).

Table 2-7. Monumental Architecture in the 30 Chiefdom Areas.

Type of Chiefdom	Cases with Data	Monumental Architecture Present	Monumental Architecture Absent
Minimal	7	3	4
Typical	8	4	4
Maximal	6	4	2
TOTAL	21	11	10

Comments. Monumental architecture is absent in almost as many chiefdom areas of the survey as it is present in. The lack of monumental architecture, therefore, is not an indication of lack of power. Power, after all, can be expressed in other ways. Within a chiefdom area where monumental architecture does exist, however, the labor involved in construction provides a useful comparative measure of power, thus providing an insight into the dynamics of power and authority. Monumental architecture in itself does not provide a measure of overall societal complexity, although its presence is probably confined to non-egalitarian societies.

It might be expected, based on the above comments on power and the display of power, that larger, more populous chiefdoms would exhibit monumental architecture more frequently than smaller ones. I suspect that this statement would

prove accurate if additional data were available, but the limited data in this survey make it untenable to draw such a conclusion.

In sum, monumental architecture embodies power. The particular structure monumentalized adds information about the source of the builder's power. Sources of power include persuasion, personal ability, control of valued resources, force, and authority based on tradition, social rank, divine support, or a law code (see Chapter 1). Monumental fortifications thus express the might or force of the leader, whereas a monumental chief's house reflects power based on persuasion or on social rank, and monumentalized religious structures express power derived from the authority of divine support.

In state-level societies, these general interpretations may not apply. This is because the nature of leadership in chiefdoms differs from that of leadership in states. In chiefdoms, the political leader is also the economic and religious leader. In states, especially post-industrial states, these realms may be segregated, with leadership held by different individuals. Thus, for example, the monumentalization of a religious structure in a state may not reflect reliance by the political leader on religious authority. Rather, it may express the power of a particular subset of the population.

Summary

Before turning to a discussion of Mississippian capitals, the findings of this chapter are presented below in a series of statements about chiefly capitals. Exceptions to or variations on these statements may, of course, occur, and in some cases additional or more detailed information on capitals may change the conclusions. Notwithstanding these qualifications, the statements presented below accurately reflect the results of this survey.

- The capital is the largest settlement (in population) in a chiefdom.
- The layout of a capital may be similar to or different than that of an ordinary settlement.
- Capitals are generally oriented practically, particularly to a feature of topography, rather than symbolically.
- The chief's house is larger than ordinary houses.
- The chief's house is more decorated or elaborated than commoners' houses; it may take a different shape or be constructed of different materials.
- The chief's house stands in a prominent location, e.g., in the center of the settlement or on a high point.
- The chief's storage facilities are larger or more numerous than commoners' storage facilities.
- The chief's storage facilities stand in a prominent place, near the chief's house.
- The chief's storage facilities may be larger or smaller in plan than the chief's house.
- Religious structures in a capital may vary in size independently of the chief's house.
- Religious structures are not necessarily located near the chief's house.
- Communal structures appear infrequently in chiefdoms.
- When communal structures are present, they usually stand near the chief's house.
- Communal structures may be larger or smaller than the chief's house.
- One or more public spaces occur in the capital (and in non-capital settlements).
- A public space is located near the chief's house.

- Walls appear infrequently in capitals.
- When walls are present, external walls serve practical purposes, while internal walls usually have social or symbolic significance.
- Monumental architecture does not occur in all chiefdoms.
- Where present, monumental architecture occurs in minimal, typical, and maximal chiefdoms.
- Chiefs' houses and religious structures are the most frequently monumentalized structures.

CHAPTER 3
MISSISSIPPIAN CAPITAL VILLAGES, PART 1: THE SIZE OF THE CAPITAL

In Chapter 2 some material correlates of chiefly capitals were presented, and the ways in which power and authority are expressed in the size and structure of the capital were considered. This chapter explores the size of Mississippian capitals. Chapter 4 will consider issues relating to the structure of Mississippian capitals.

Identifying Mississippian Capitals

The first task is to identify Mississippian capitals. A capital is, by definition, the residence of a supralocal political leader (see Chapter 1 for discussion of capitals). The clearest evidence for identifying capitals (Mississippian or otherwise) thus comes from a direct ethnographic or documentary statement similar to the following: "Village X is the home of the high chief." To be useful to archaeologists, such a statement must include a complete enough description to allow for recognition of the site in today's landscape.

The physical characteristics of capitals also help to identify them. For example, Christopher Peebles and Susan Kus (1977:432) and Colin Renfrew (1973:543) have pointed out that a hierarchical settlement pattern invariably accompanies the political hierarchy of chiefdoms. Indeed, the presence of a settlement hierarchy stands as one of several archaeological correlates of chiefdoms (Peebles and Kus 1977:432). The sites uppermost in the settlement hierarchy thus represent capitals. Data from the

chiefdom survey discussed in Chapter 2 of this dissertation support this view. The capital is the largest site; it contains larger, more prominent, and more elaborate structures, and it is the location of monumental architecture if any exists in the polity.

Evidence for identifying Mississippian capitals comes from both documentary sources and archaeological research.

Documentary Evidence

The best information on Southeastern capitals comes from descriptions of the early eighteenth century Natchez. Moreover, the characteristics of Natchez capitals are discernible in the modern landscape. Pierre LeMoyne d'Iberville (McWilliams 1981:125), visiting the area in 1700, says,

> When I got to the landing, I sent a man to notify the chief of my arrival . . . . I went to this village, which is 1 league from the edge of the water . . . . Halfway there, I met the chief coming to meet me.... We proceeded to his hut, which is erected on a 10-foot mound of dirt carried there, 25 feet wide and 45 long. Close by it are eight huts. Facing the chief's is the temple. These form a ring somewhat oval-shaped and enclose a public square about 250 yards wide and 300 long.

Writing some years later, Antoine Le Page du Pratz (1975:338) described the chief's quarters in the Natchez capital.

> Strangers are then invited to dine with the Great Sun, and in the evening there is a dance in his hut, which is about thirty feet square, and twenty feet high, and like the temple is built upon a mount of earth, about eight feet high, and sixty feet over on the surface.

Because the eighteenth century Natchez lived somewhat later than the Mississippian period as described here, it is useful to examine the documentary record for evidence from a time closer to the precolumbian period.

Two chroniclers of the de Soto expedition of 1539-1543, one who was present (Luis Biedma) and one who interviewed participants (Garcilaso de la Vega), both note

the association of chiefs and physically high places. Biedma (Buckingham Smith 1968:251), in describing the placement of a cross on a mound in the town of Icasqui (or Casqui), notes that

> . . . it is the custom of the Caciques [chiefs] to have near their houses a high hill, made by hand, some having the houses placed thereon . . . .

Garcilaso, who also mentions the mound at Casqui, provides a general description of contact period Mississippian capitals (Varner and Varner 1951:170-171, 431).

> . . . [T]he Indians of Florida [i.e., the Southeast] always try to dwell on high places, and at least the houses of the lords and Caciques are so situated . . . [T]hey build such sites with the strength of their arms, piling up very large quantities of earth and stamping on it with great force until they have formed a mound from twenty-eight to forty-two feet in height. Then on the top of these places they construct flat surfaces which are capable of holding the ten, twelve, fifteen or twenty dwellings of the lord and his family and the people of his service, who vary according to the power and grandeur of his state.

Although Garcilaso is known to have exaggerated numbers and dimensions, his general statement rings true (compare it, for example, with the statements for the later Natchez). Documentary evidence thus suggests that flat-topped mounds with chiefs' houses on top were integral features of Mississippian capitals.

Archaeological Evidence

Archaeological evidence indicates that Mississippian sites fall into several general categories based on the presence or absence of earthen platform mounds and the extent of the occupation area, although there are, of course, local variations (see Steponaitis 1986:390; Smith 1978b, 1985:75,77, 1986:62).

Most Mississippian sites are small occupation areas of less than 1 ha. Excavations often reveal the presence of one to four houses accompanied by outbuildings (Smith 1978a, 1978b; Scarry 1989; Green and Munson 1978; Morse and

Morse 1983:238-239). Archaeologists generally interpret these as farmsteads occupied by one or two families. Some excavated examples include the Gypsy Joint site in southeast Missouri (Smith 1978a) and the MacArthur site in southeast Arkansas (Rolingson 1976:113-114).

Other sites contain evidence of higher populations with remains of five to fifteen structures, sometimes including a larger structure interpreted as a communal building (Harn 1978:254; Milner et al. 1984:186; Green and Munson 1978:310; Rolingson 1976:110, 113). This site type is generally termed a hamlet. The Borrow Pit site in northwest Florida (Jones 1990:83; Payne 1982; Shapiro and McEwan 1992:264-265), though only partially excavated, presents a good example of a hamlet with its four houses arranged in an arc flanking a larger communal structure.

A third site type consists of a large occupation area with more than 15 structures. Termed villages or towns, these are often fairly compact and frequently surrounded by a fence or an embankment. The Turner and Snodgrass sites in southeast Missouri are excellent examples of this site type (Price 1978:218-219).

A fourth site type contains one or more platform mounds in addition to a residential area. The size of the residential area varies from farmstead to town size. Archaeologists sometimes subdivide this category into sites with one platform mound and sites with two or more mounds (cf. Fowler 1978:468-471; Steponaitis 1978:437). Platform mounds range in height from 0.5 m to 30 m, and most can reasonably be described as monumental architecture (i.e., unnecessarily large and elaborate constructions, the building of which is beyond the scope of a single household [cf. Trigger 1990:119; Peebles and Kus 1977:432]).

Mississippian sites can thus be arranged in a hierarchical fashion from the smallest (farmsteads) to the largest (multi-mound centers). Moreover, the largest sites contain large and prominent constructions that can be described as monumental architecture.

On Using Platform Mounds to Identify Mississippian Capitals

To summarize the evidence presented above: (1) direct statements in documents from the early contact period clearly link Mississippian chiefs and their capitals with platform mounds; (2) archaeological research reveals a hierarchy of Mississippian sites--farmsteads, hamlets, villages, single-mound sites, and multi-mound sites--with mound centers standing at the top of the hierarchy; and (3) most platform mounds can be classed as monumental architecture.

It seems safe to say, given this evidence, that sites with platform mounds represent Mississippian capitals, especially if accompanied by a large occupation area. Such sites embody in their construction the presence of or the control of large numbers of people.

The presence of platform mounds is a more useful indicator of precolumbian Mississippian capitals than a characteristic such as size of the residential area for several reasons. First, platform mounds occur in all areas of the Mississippian world. Second, population density varies across the Mississippian world. In general, Mississippian settlement pattern includes both dispersed and nucleated patterns (Smith 1978b:489-490, 1985:75-77; Muller 1986:173-174). As a result, some chiefly capitals may not have had large resident populations, while others may have been highly nucleated. The size of the residential area thus is not comparable across the whole area. Third, determining the size of residential areas requires extensive

archaeological investigations. Acquiring this information for large numbers of sites is highly impractical. Conversely, data on mounds are often recorded during even the most cursory research. The presence of platform mounds is therefore highly accessible information.

Given the foregoing information, Mississippian capitals then can be identified with some confidence as sites with one or more platform mounds.

Mississippian Mound Center Survey

Having identified Mississippian capitals, the next step is to collect information about the physical attributes of mound sites just as was done for capitals in ethnographically known chiefdoms (see Chapter 2).

Goals of the Survey

The primary goal of the survey is to establish a database that includes basic information about the physical characteristics of Mississippian mound centers. It is particularly important to acquire data that the chiefdom survey indicated was useful in studying political structure.

Contingent on the completion of the first goal, the second is to compare mound centers in terms of size and structure attributes (see Chapter 4) and to interpret any patterns discerned.

The third goal is to establish frameworks (or classifications) within which to discuss Mississippian mound centers. The classifications presented in this chapter and the next have been designed strictly for heuristic purposes. They are intended not necessarily to answer questions but to bring to light new or more useful questions and to suggest directions for continuing research. The frameworks also provide a

common language for discussing various aspects of the size and structure of the mound centers. These classifications are *not* intended to confine the discussion of mound centers to delimited categories.

The goals of this survey then are broad, synchronic ones. They are primarily descriptive and comparative and encompass the entire Mississippian time period. An understanding of change through time is not the primary purpose. As a result of this broad focus, some of the details in the picture of Mississippian capitals may be lost. This loss is compensated for by the creation of a broad comparative base on which to build and, most importantly, by the establishment of a Mississippian-worldwide perspective within which to examine political capitals.

Mound Center Database

The sites included in this survey are Mississippian sites with one or more earthen platform mounds. The resulting database includes information on 536 mound centers, although not all information was available for all sites. The database includes Mississippian sites from all parts of the Southeast and Midwest. The geographic extent of these sites effectively shows the extent of the Mississippian world (see Figure 3-1).

Some constraints existed due to the nature of the resource base. For example, while it was possible in the chiefdom survey to record attributes of the chief's house directly, such information is not directly accessible in the archaeological record. Data recorded in the mound center survey, therefore, comprise archaeologically recoverable characteristics deemed to relate indirectly to features of the capital (e.g., size of the main mound which relates to the size of the chief's house).

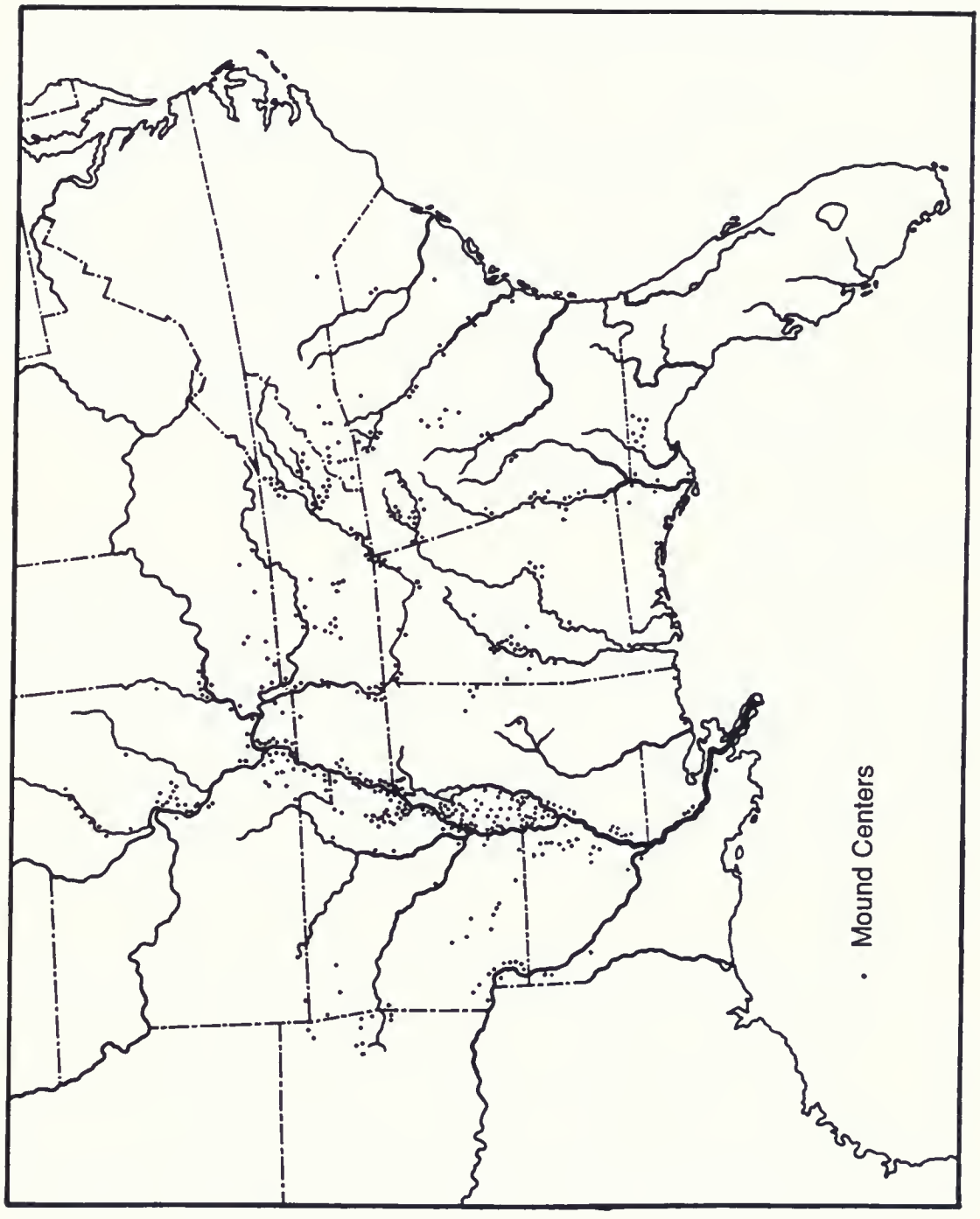

Figure 3-1. Mississippian Mound Centers.

A second constraint occurs because the survey is a very broad one. In a survey including more than 500 archaeological sites, the data collected necessarily must be very visible or easily acquired (i.e., without extensive excavations). Fortunately, because of the public nature of political structure, many informative features of mound centers are highly visible, most notably the mounds themselves.

The remainder of this chapter deals with features related to the size of the capital. Several measures of size were readily available, allowing for a detailed discussion of this subject. Aspects related to the structure of mound centers are considered in Chapter 4.

Measuring the Size of Sites

Size (population) of chiefly capitals was earlier (Chapter 2) shown to be an important indicator of power. Recall that power is the ability to control the actions of people (see Chapter 1). The more people a leader controls, the greater his power. The size of a capital, then consists of the number of people resident there or, alternatively, the number of people whose labor is commanded by a leader.

Archaeologists have used several measures to describe the size of mound centers. Number of mounds is most frequently used, particularly the distinction between single-mound sites and multi-mound sites (Payne 1981; Bell 1984:227-228; Brown 1984:242-243; Smith and Kowalewski 1980:3, 5). Area of site has been used occasionally (Smith 1987:68-72; Brown et al. 1978:190-192; Price 1978:213; Morse 1981:46; Lewis 1990:46) when that information is available from area excavations. In the discussion below, a variant of area, mound precinct area, is examined. The height of the main mound at mound centers has been used to describe the size of the site, sometimes implicitly (Steponaitis 1986:390), sometimes explicitly (Brain 1978:340-341).

The total volume of earth in the constructions at mound centers also has been used (Steponaitis 1978:446-448; Scarry and Payne 1986:82-83; Blitz 1993:46; Muller 1986:200). Total volume is difficult to acquire for large numbers of sites, so volume of the main mound has been substituted in the discussion below. Both the last two criteria and probably the number of mounds measure not resident population but labor controlled by the leader. Each of these four measures of size (number of mounds, mound precinct area, height of main mound, and volume of main mound) will be discussed and evaluated in more detail in the following sections.

Before turning to a discussion of the first measure, it is necessary to comment on one difficulty of all these measures and indeed of any undertaking of this kind. This is the problem of the longevity of sites. Since many Mississippian sites spanned a hundred or more years (some as much as three or four hundred years), values for any of the criteria mentioned above may be a product, at least in part, of the duration of the site. In a broad scale survey like this it is virtually impossible to acquire adequate data relating to small time spans for large numbers of sites. This problem must therefore remain unresolved, and the reader, who is urged to keep in mind the heuristic nature of the study, must remain aware of possible distortions in any patterns discerned.

Number of Mounds

The number of mounds per site is a particularly accessible piece of information. Out of 536 sites recorded, this information was available for 467 sites (87.1%). All 467 sites have at least one platform mound, but the number of mounds per site includes other kinds of mounds as well.

The number of mounds per site ranges from 1 to 100, although only 7 sites (1.5%) have more than 16 mounds. Figure 3-2 illustrates the frequency of sites by number of mounds per site.

The most frequently occurring number of mounds is 1, constituting 47.1% (220 sites) of the total. The actual figure was probably far higher than the 220 recorded here. Many small mound sites were undoubtedly destroyed or eroded away without any recognition of their significance. Indeed, many single-mound centers could still be extant but unrecorded. The piechart in Figure 3-3 illustrates the predominance of single-mound sites, as well as the high proportions of sites with two and three mounds.

The mean number of mounds per site is 3.2. This figure is quite small compared to figures for the most familiar mound centers (e.g., Moundville: 20 mounds; Angel: 11 mounds; Spiro: 9 mounds). This suggests that the current picture of mound centers is skewed by research emphasis on the largest sites.

Even smaller than the mean is the median: 2 mounds per site. This figure again emphasizes that most mound centers are very small. To get a better handle on the shape of the distribution, it is useful to construct a box-and-whisker plot.

A box-and-whisker plot is an Exploratory Data Analysis (EDA) technique that provides a visual summary of the spread of a distribution (Shennan 1988:44-46; Hartwig with Dearing 1979:23-25). This technique relies on the median and midspread (or interquartile range), measures regarded as more resistant (i.e., less sensitive to a few extreme values) than mean and standard deviation (Hartwig with Dearing 1977:19, 21).

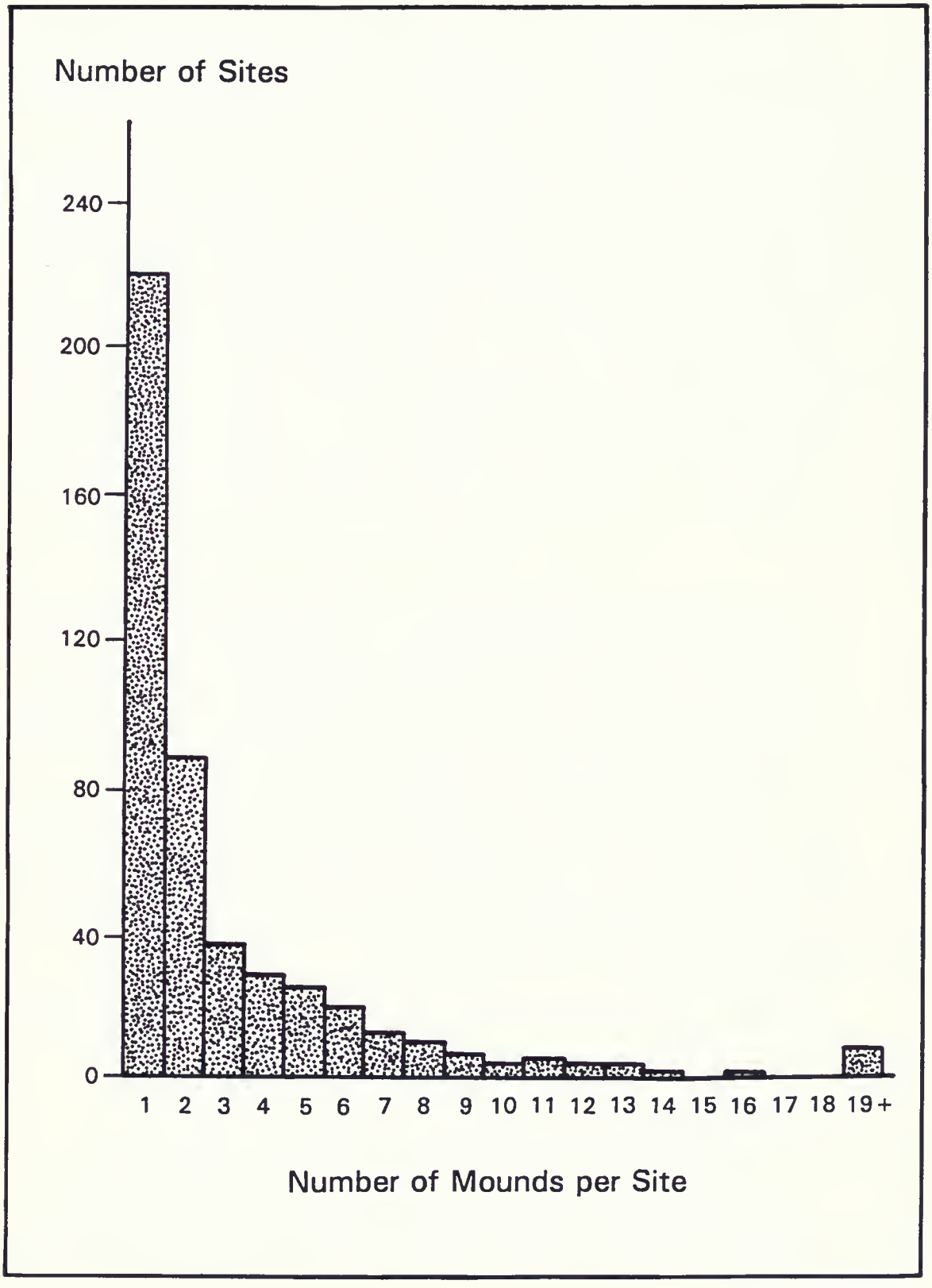

Figure 3-2. Frequency of Sites by Number of Mounds: Bar Graph.

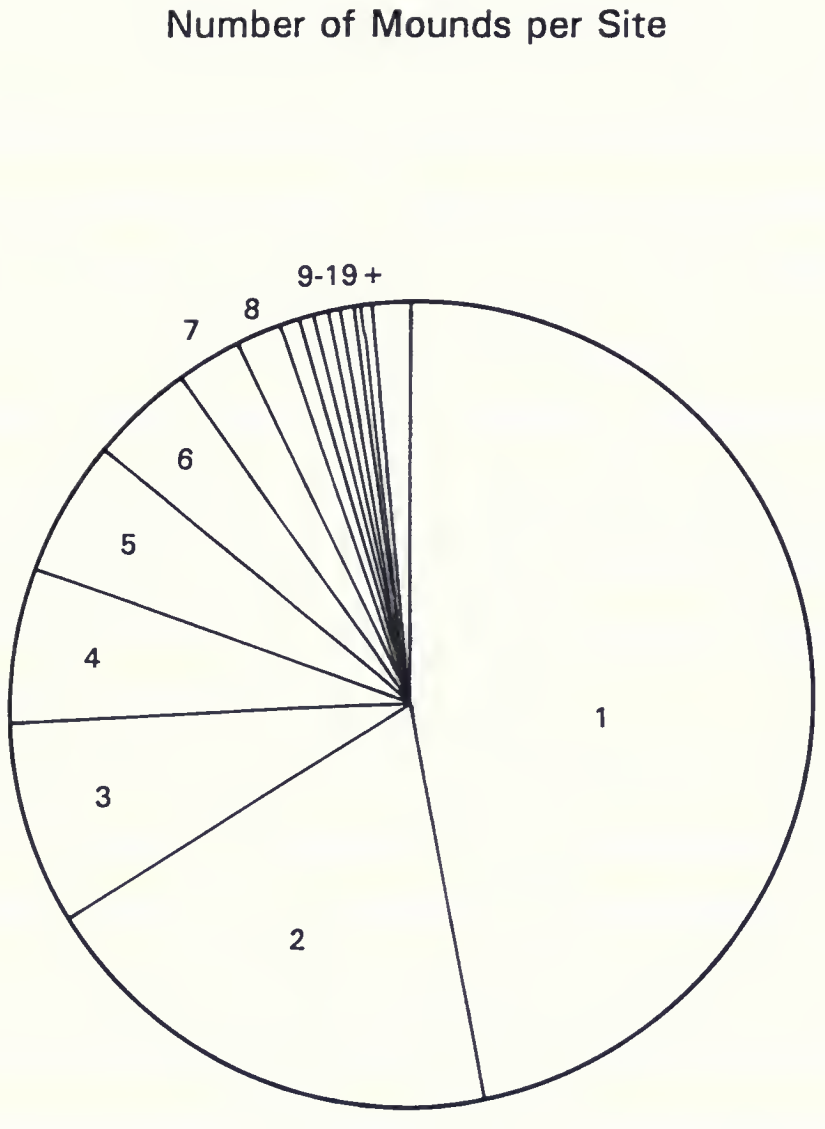

Figure 3-3. Frequency of Sites by Number of Mounds: Pie Chart.

In a box-and-whisker plot (see Figures 3-4 and 3-5), the central vertical line marks the median (a cross indicates the mean). The sides of the box lie at the lower and upper quartile values (or hinges). The box therefore encloses 50% of the cases in the sample. The "whiskers" (the horizontal lines attached to the box) indicate the values outside the middle 50% but within 1.5 times the midspread (the difference between the upper and lower hinges). Values outside the range marked by the box and whiskers are plotted individually and referred to as outliers. Outliers more than 3.0 times the midspread beyond the hinge are designated by stars.

Box-and-whisker plots are valuable in detecting asymmetry in a distribution and in identifying outliers or extreme values, the nature of which can be informative. Box-and-whisker plots provide information about the bulk of the distribution (the values in the middle) as well as providing detail about the tails of distributions with extreme values (Hartwig with Dearing 1977:21, 23).

The box-and-whisker plot in Figure 3-4 shows that values of 9 or more mounds are extreme and do not describe the bulk of the data, 50% of which falls between 1 and 4 mounds per site. However, the outliers, especially the most extreme value, 100, overwhelm the graph, making the pattern difficult to see. Removing the highest value temporarily from the database makes it possible to see the details of the box plot a little more clearly (see Figure 3-5). Note that removing the highest value does not change the box, the whiskers, or the outliers (except to eliminate "100"); it just expands the figure, making it more legible.

Sites with five to eight mounds (the area enclosed by the "whisker") have sometimes been regarded as medium-sized sites (Brain 1978:341; Payne 1989). In the context of the distribution, however, these sites can be seen to be considerably larger

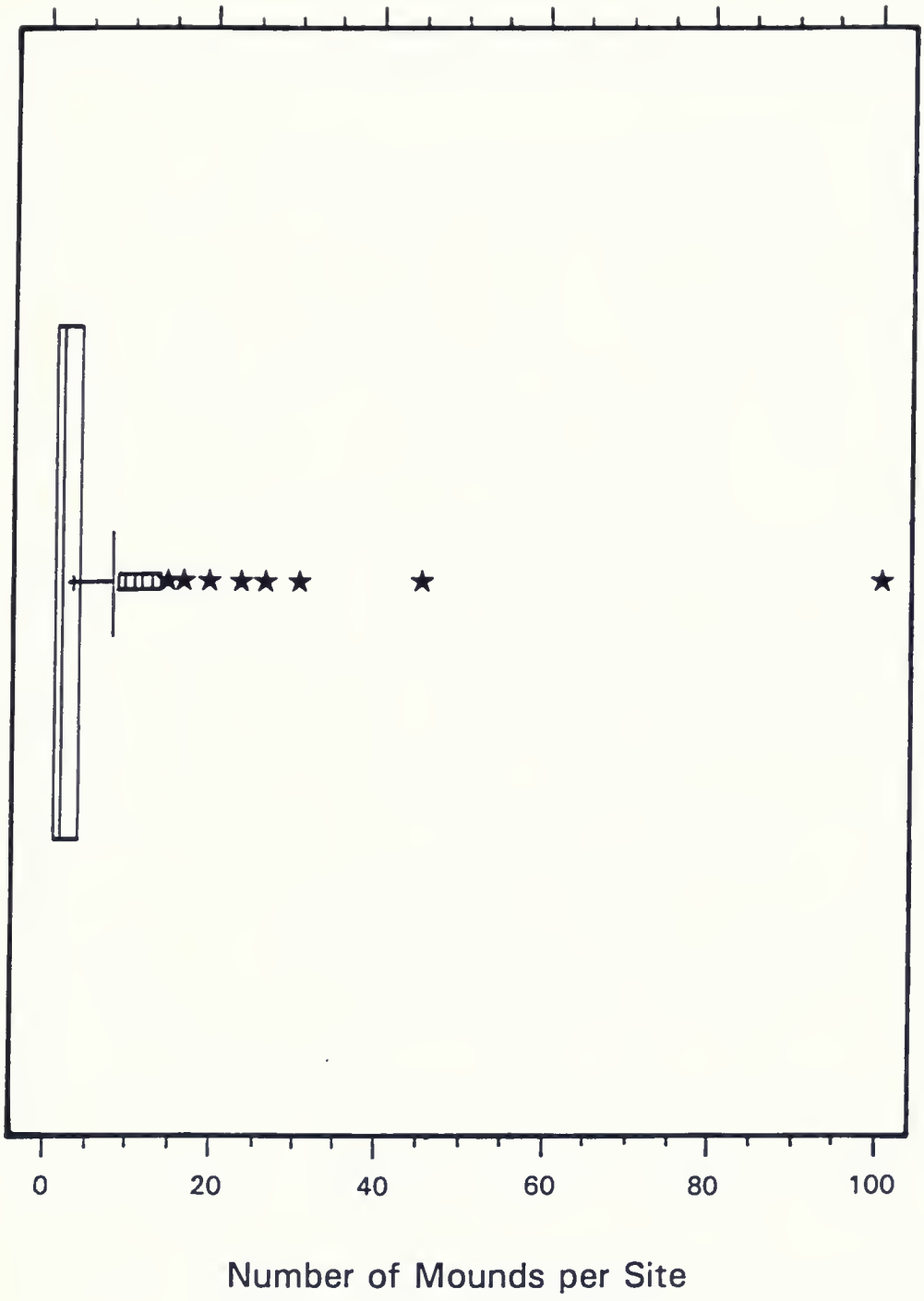

Figure 3-4. Number of Mounds per Site: Box-and-Whisker Plot.

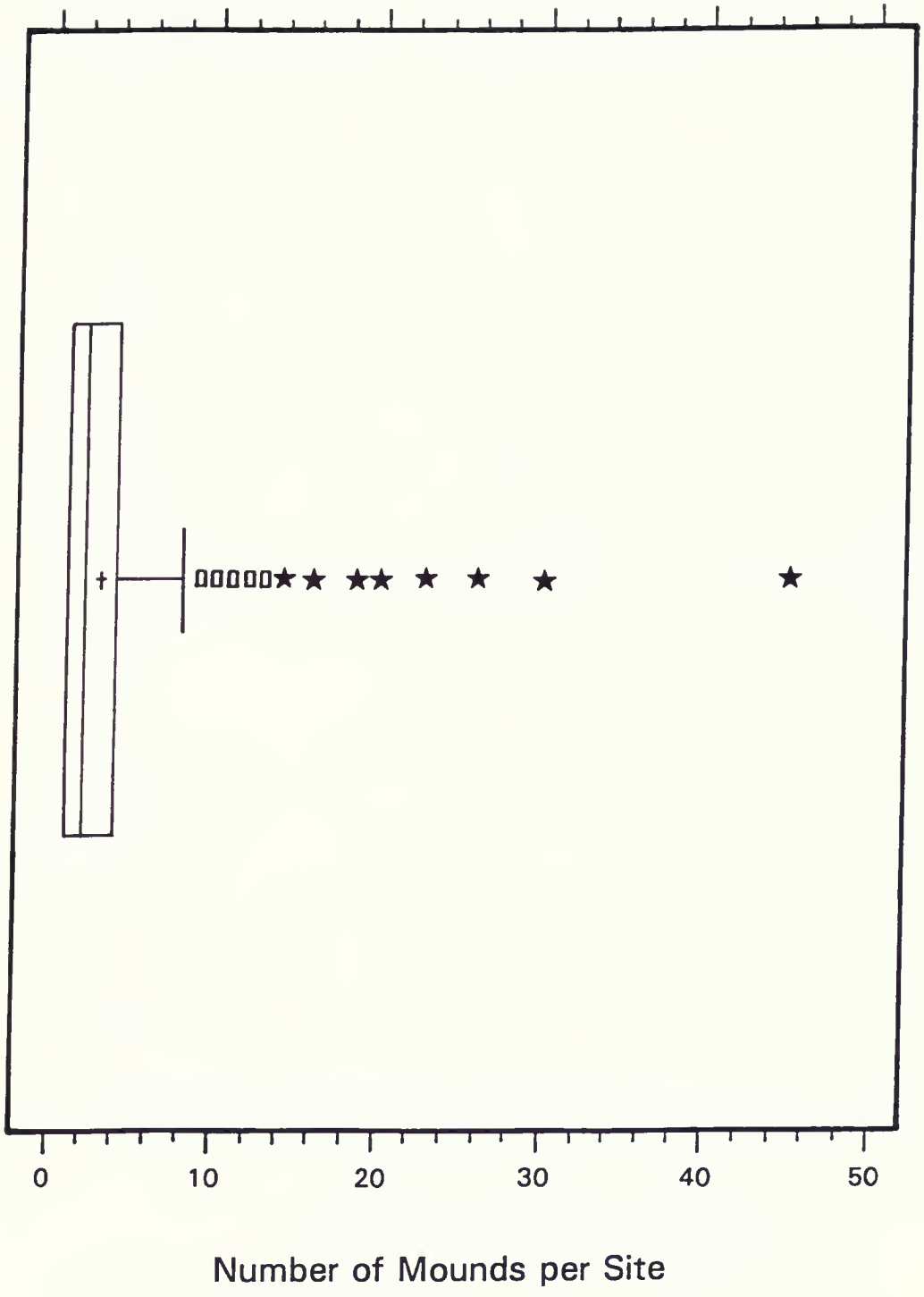

Figure 3-5. Number of Mounds per Site (excluding Cahokia). Box-and-Whisker Plot.

than average. Moreover, they constitute a very limited proportion (14.1%) of the total number of sites. "Medium-sized" should not be taken to mean medium frequency. The loss of even a few sites of this size would result in a disproportionately large loss of information. It is especially important to preserve them in light of the fact that many of the largest sites (e.g., East St. Louis, St. Louis, Savannah) have long since disappeared.

The outliers on the box-and-whisker plot (sites with 9 or more mounds) constitute only 5.1% of the sample (24 out of 467). These sites are listed in Table 3-1 and their geographic distribution shown in Figure 3-6.

Table 3-1. Mississippian Mound Centers with Nine or More Mounds.

Site	Mds	Site	Mds
Cahokia	100	Otter Pond	12
East St. Louis	45	Mayersville	11
Lake George	30	Mitchell	11
St. Louis	26	Angel	11
Winterville	23	Mineral Springs	11
Moundville	20	Lilbourn	10
Kincaid	19	Mulberry	10
Savannah	16	Jordan	9
Rich Woods	14	Spiro	9
Bottle Creek	13	Sandy Woods	9
Mound Bottom	13	DeGraffenreid	9
Sikeston	12	Williamson	9

Most of the sites in Table 3-1, especially the very largest (i.e., 19 to 100 mounds) are well known. Some, such as St. Louis, East St. Louis, and Savannah (on the Tennessee River), may not be familiar because they were destroyed in the nineteenth century (Chapman 1980:164; Snyder 1962:263; Moore 1915:221), unfortunately taking large chunks of potential data about large Mississippian mound

centers with them. Some sites (e.g., Cahokia, Lake George, Moundville, Kincaid, Angel) have been the foci of large research projects. Others (e.g., Rich Woods, DeGraffenreid, Otter Pond) appear infrequently in the literature.

The geographic distribution of the outliers (Figure 3-6) reveals several interesting points. The cluster of very large sites around Cahokia (within a 30 km radius), for example, serves to emphasize the importance of the American Bottom region if any confirmation beyond the mere presence of Cahokia were needed. Also noteworthy is another cluster of large sites in the region between Greenville and Yazoo City, Mississippi. Two very large sites (Lake George and Winterville) dominate this part of the Lower Mississippi Valley. A third site (Mayersville) lies close by. A fourth site (Jordan) lies a short distance from the cluster but dates to a later time period (Kidder 1992:129; Williams and Brain 1983:375-381).

The locations of the seven largest mound centers by this criterion are informative. Four of these (Cahokia, St. Louis, East St. Louis, and Winterville) are located in the Mississippi River valley and two others less than 75 km away on tributaries of the Mississippi (Lake George on the Sunflower-Yazoo and Kincaid on the Ohio). Only Moundville lies outside the Mississippi River watershed.

Number of mounds per site appears to offer a reasonable measure of size. Certainly the seven largest sites by this criterion are sites likely to be viewed as largest by researchers. But there are some limitations in using number of mounds to describe size. For one thing, it is unclear how number of mounds is related to the size of resident population or the amount of labor controlled. Moreover, because of the long time span of many sites, all mounds may not have been in use at one time. To some extent, then, the number may reflect, or at least be affected by, the duration

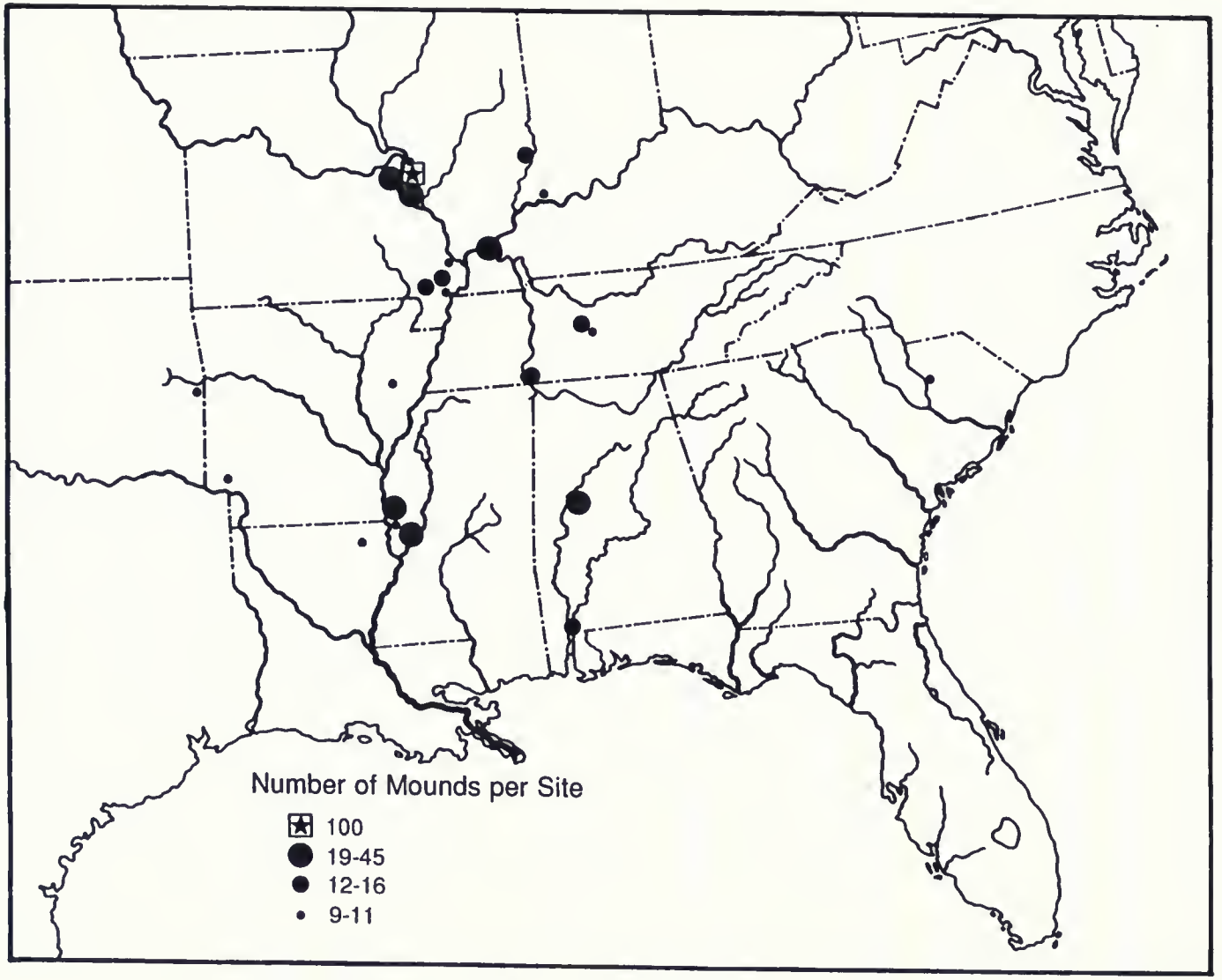

Figure 3-6. Mississippian Mound Centers with Nine or More Mounds.

of the site. In addition, some unexplained omissions occur. For example, some sites often described by researchers as large (e.g., Etowah, Ocmulgee, Anna) fall far down the list. At the same time, some unlikely ones (e.g., Rich Woods, Mulberry) are included. Worth noting, too, is the fact that while several researchers have described Moundville as second only to Cahokia in size (Peebles and Kus 1977:435; Neuman 1984:273; Walthall 1980:211; Steponaitis 1983:1), by this criterion it ranks only sixth. This occasional failure to identify known major Mississippian mound centers suggests that while number of mounds may be a useful rough indicator of size, other factors may be involved in distinguishing overall site size (or, conversely, that our perspective is distorted by the present state of knowledge).

The availability of data on number of mounds per site and its general utility as a size indicator favors its continued use despite some limitations. As will be seen later, number of mounds may be more useful if combined with another variable.

Mound Precinct Area

Site area has been used by archaeologists to measure site population (Hassan 1981:63-72). The use of this measure is based on studies relating the amount of living space to the population size (Naroll 1962; Cook and Heizer 1965, 1968). The number of houses is thus a useful indicator of population size. Determining numbers of houses, however, requires the excavation of extensive areas.

More generally, attempts have been made to estimate population size from overall area of the site (see Hassan 1981:66 for examples and discussion and Smith 1987:68-72). This estimate requires the assumption of a given population density (usually determined from extensive excavations at a small number of sites in the

region). To use this method successfully, site investigation must be thorough enough to be able to calculate the extent of the occupation area.

As noted earlier in the section on identifying Mississippian capitals, in a broad-scale survey like this one, it is important that a measure be easily determined for a large number of sites. A measure relying on extensive investigations at individual sites is, therefore, impractical. As an alternative, however, it is possible to calculate the area of the mound precinct relatively easily if accurate site maps are available.

Mound precinct area (MPA) as used here is defined by a rectangle which encloses the mound group. MPA is then calculated by multiplying the width of the rectangle by its length. Clearly, the concept of mound precinct is used here as an analytical tool rather than as an indicator of an actual chiefly precinct, although some correspondence between the two undoubtedly exists.

Mound precinct area was available for only 66 (12.3%) of the 536 sites in the survey. This is partly because more extensive data (i.e., site maps) were necessary and partly because the definition of MPA precluded the inclusion of the smallest sites (1, 2, and 3 mound sites). The resulting database then measures only the upper portion (at least by the criterion of number of mounds) of the overall database.

MPA ranged from 1.3 ha to 810 ha (Cahokia). The most frequent size category was for sites with an MPA of 1.3 to 5.0 ha (23 sites) (see Figure 3-7). The median MPA is 8.2 ha, while the mean is 23.6 ha. The large size of the mean is undoubtedly affected by the presence of Cahokia with an MPA more than 16 times greater than that of the next largest site (Moundville with an MPA of 48.8 ha). Without Cahokia's extreme value, the mean in fact drops to 11.5 ha. The median figure of 8.2 ha (which

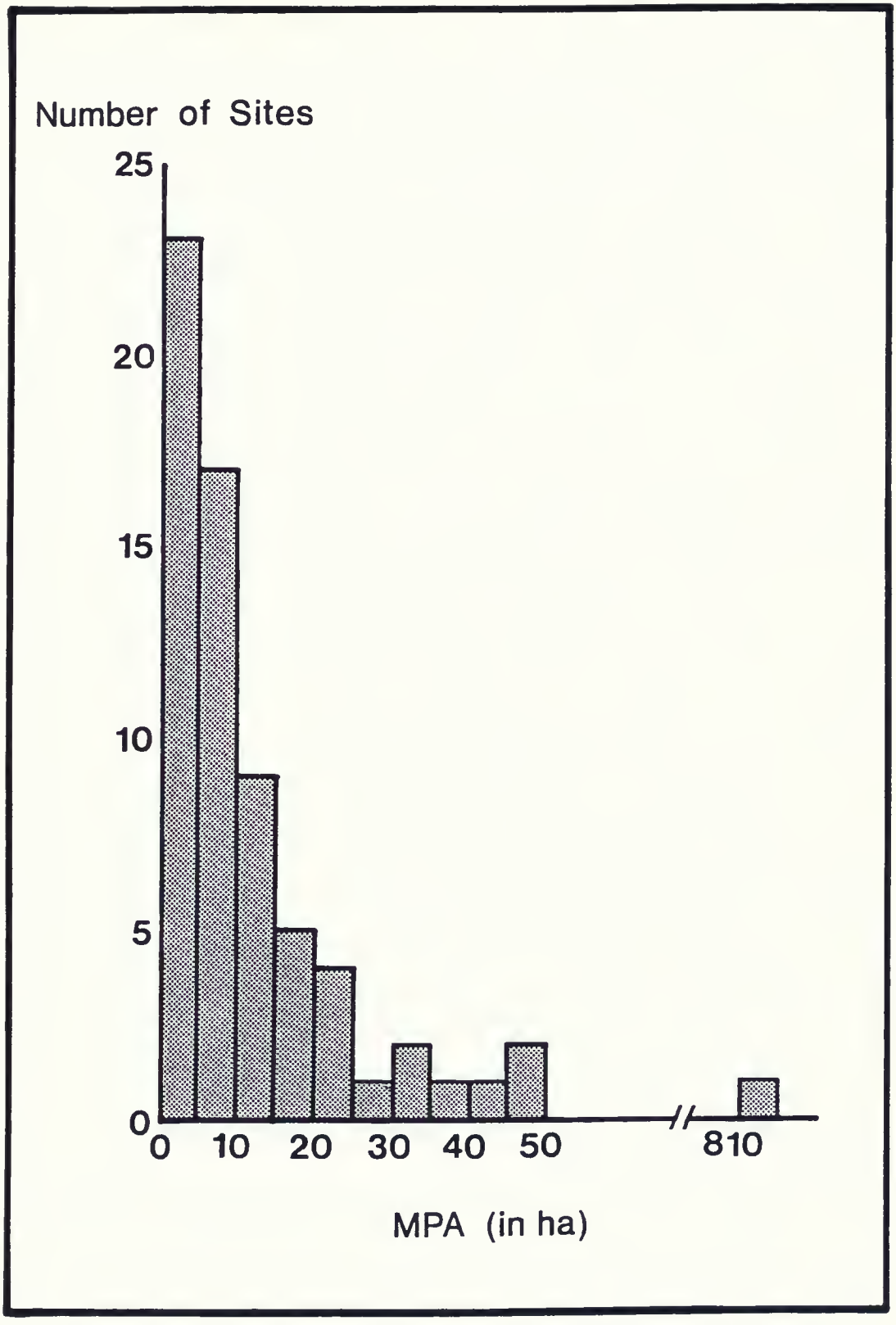

Figure 3-7. Frequency of Sites by Mound Precinct Area: Bar Graph.

declines only slightly to 8.1 ha without Cahokia) is clearly more representative of the middle of the database.

Table 3-2 lists the 66 sites by 5 rough categories derived from Figure 3-7. The 17 sites considered largest by this criterion (the top four rows) bear some similarities to the sites largest in number of mounds. Many of the sites with the largest MPA are the same as the sites largest in number of mounds, but the order is different. Moundville is now ranked second in size to Cahokia, while some of the largest in terms of number of mounds (e.g., Lake George and Winterville) are surpassed in MPA by sites smaller in numbers of mounds (notably Lilbourn, Spiro, and Ocmulgee). Data on MPA for the second largest site in number of mounds (East St. Louis) are not available for comparison. It is noteworthy that Etowah, which did not appear among the largest sites in number of mounds, also does not appear among the largest in MPA. As can be seen in Figure 3-8 (in which Cahokia has been removed in the interests of legibility), MPA does not appear to correlate with number of mounds.

Figure 3-9 shows the distribution of the 17 sites (25.8% of the total) with the largest MPAs. Most of the large sites occur in the western part of the Mississippian world; very few appear in the eastern part. Once again clusters of large sites appear in the American Bottom and the Greenville-Yazoo City area, indicating the importance of these two regions. Ten sites are found in or very near the Mississippi River basin. Four others (Spiro, Lake Jackson, Ocmulgee, and Angel) plus the American Bottom sites lie at the edges of the Mississippian world.

Table 3-2. Mound Precinct Area of 66 Mississippian Mound Centers.

Over 50 ha	Cahokia		
45-49 ha	Moundville	Angel	
30-44 ha	Ocmulgee Savannah	Mitchell	Kincaid
15-29 ha	Spiro Lake George Lake Jackson Jackson Place	Rich Woods Mayersville St. Louis	Lilbourn Winterville Powell
1-14 ha	Norman Sikeston Collins Fitzhugh Grace Langdon Obion DeGraffenreid Metcalfe Haynes Bluff Matthews Emerald (MS) Alligator Griffin Alphenia Blanchard Wickliffe	Goforth-Saindon Anna Crenshaw Jordan Shiloh Lake Dawson Harlan Huntsville Adams Upper Nodena Cary Parkin Sumner Co. Mds. Williamson Powers Fort Leland	Bottle Creek Mound Bottom Mineral Springs Sandy Woods Etowah Jaketown Arcola Towosahgy Linn Magee Swan Lake Kinlock Menard Shoulderbone Cramor Perkins

Several difficulties arise in attempting to use mound precinct area as a measure of site size. To begin with, some fundamental problems exist in the application of site area in general to the determination of site populations for a large region such as the Mississippian world (see above). In order to estimate population from the overall area of a site, regional population density must be assumed (Hassan 1981:66; Smith 1987:68-70). As noted earlier, settlement density varies widely across the Mississippian world from dispersed to nucleated. Capitals may be compact or dispersed for reasons unrelated to population, e.g., constraints imposed by defensive

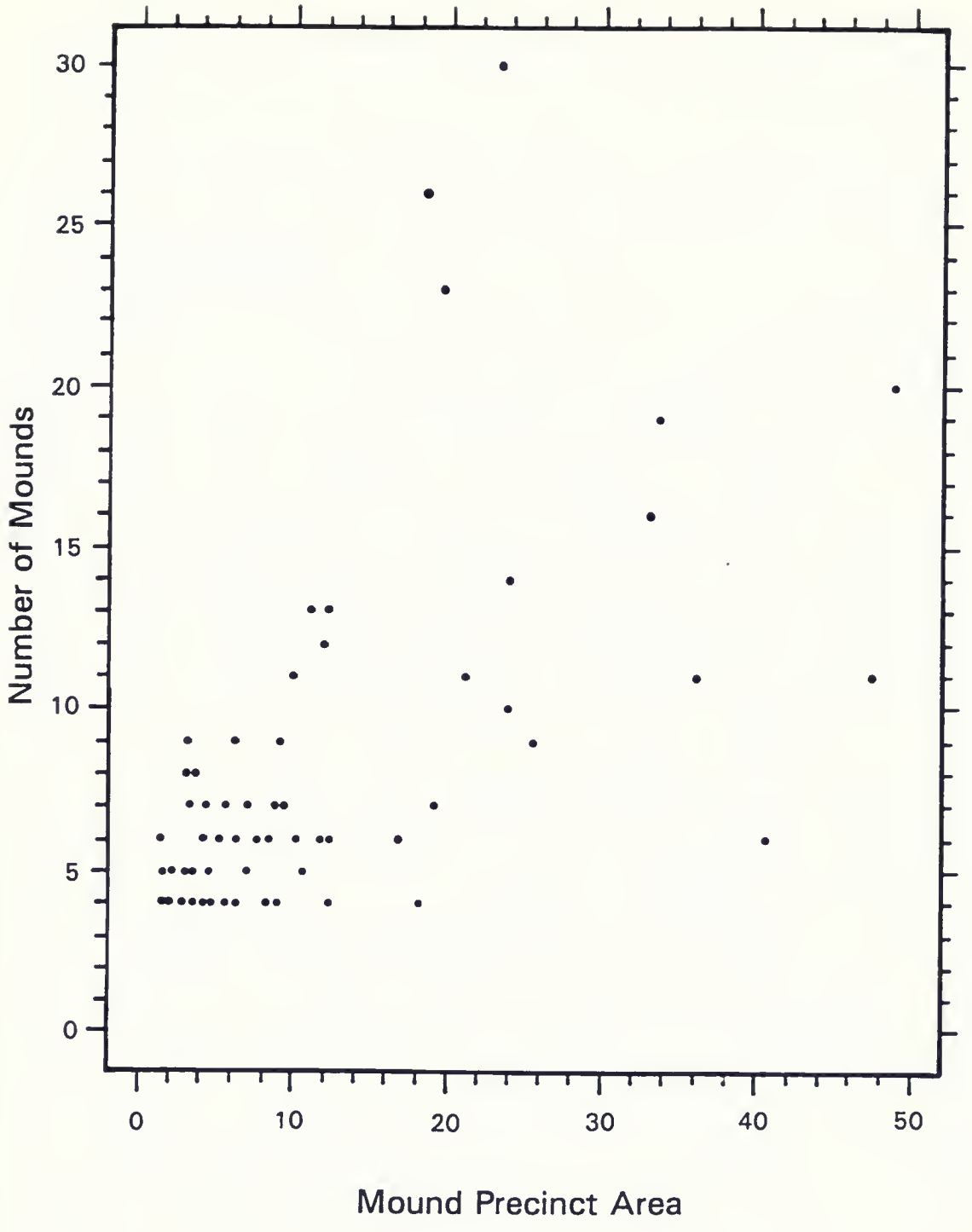

Figure 3-8. Number of Mounds per Site vs. Mound Precinct Area (excluding Cahokia).

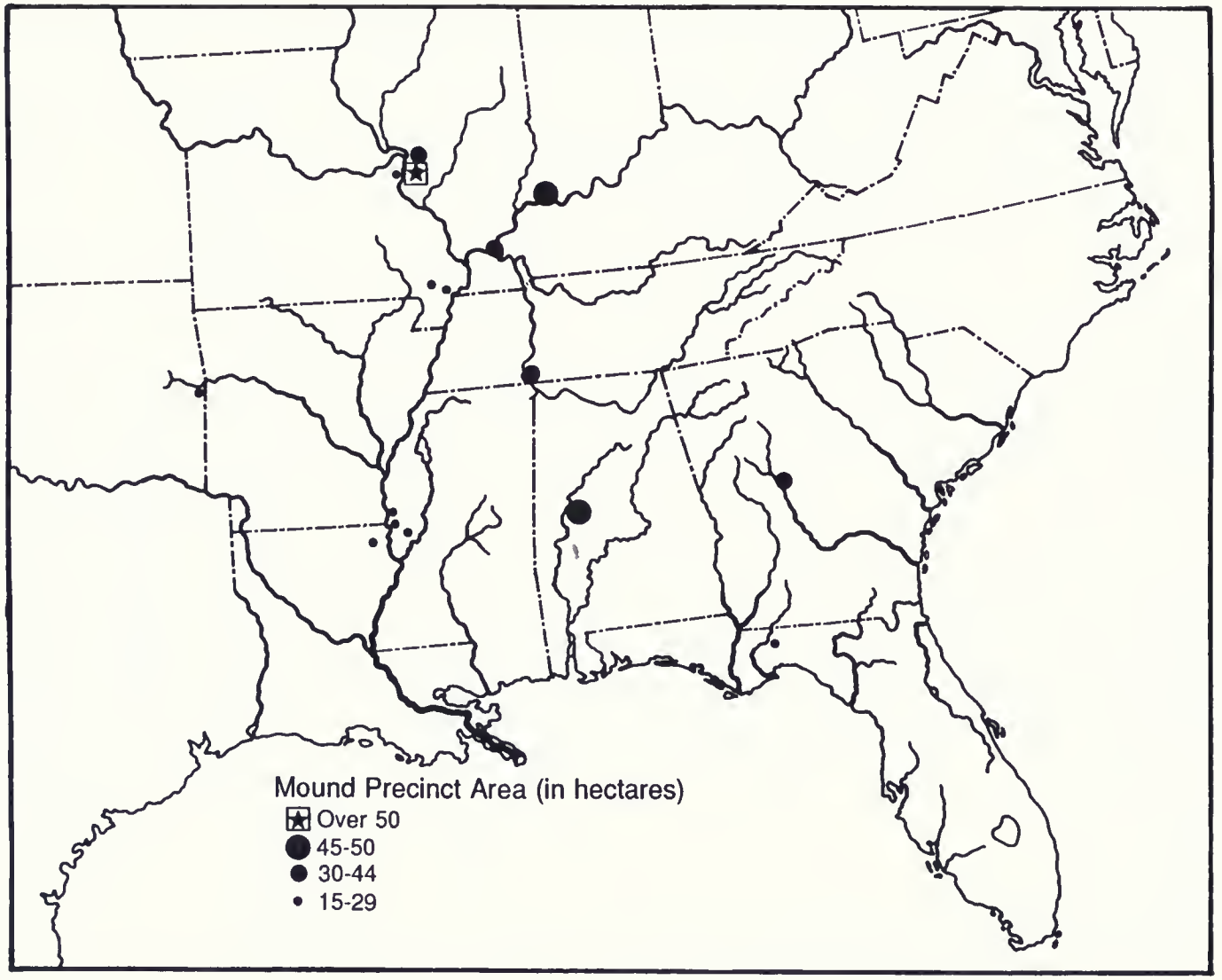

Figure 3-9. Mississippian Mound Centers with MPAs of 15.0 ha or Greater.

needs (walled sites often have higher population densities according to Hassan [1981:67]), topography, or the distribution of arable land or other natural resources (see also Smith 1978b:489-490). This variability makes the assumption of a uniform regional population density untenable and presents great practical difficulties in acquiring usable data for a large-scale study such as this one. Analyses of site area and population are better suited to studies on a smaller geographic scale (e.g., Marvin Smith's [1987:68-72] study of early historic period aboriginal sites in the interior Southeast).

The use of MPA as a substitute for overall site area also presents some problems. The use of site area to estimate population relies on the relationship between the amount of living space and the number of people present (see Hassan 1981:66). Mound precinct area, however, is public space not living space. Indeed, in his study of early contact period site area and population, Marvin Smith (1987:68-72) *subtracts* the area of the public space from overall site area to derive a population estimate. The area of the mound precinct thus may not be analogous to site area.

Some practical difficulties further afflict the use of MPA as a size measure. First, the configuration of a site may affect the MPA, i.e., an outlying mound may increase the MPA (as in the case of Lake Jackson [see Chapter 5]). Second, MPA is not readily calculable for sites with one, two, or three mounds. Consequently, the figures for MPA presented here describe only sites above the median in the number of mounds category, resulting in an incomplete picture. Finally, the small number of sites (66 out of 536--12.3%) for which data are available makes this an impractical measure in large-scale studies.

Thus MPA seems not to be a practical (or particularly useful) measure of the size of Mississippian mound centers for region-wide comparisons. However, while of limited utility in discussing size, MPA is potentially informative on other issues. Analyses of MPAs, for example, might shed light on subjects such as those noted above, e.g. the effects of topography, defensive needs, and natural resources.

Height of Main Mound

Archaeologists occasionally use height of the dominant mound as a measure or partial measure of site size (see, for example, Brain 1978:340-341). Sites with information on height of the main mound number 353 (65.9% of the total), making this a relatively accessible piece of information. Main mound heights range from 0.5 m to 30 m. The mean height of main mounds is 4.8 m while the median height is 4.0 m.

Figure 3-10 shows the distribution of main mound heights in one-meter ranges. The modal range is 3.0 to 3.9, but the one-meter ranges on either side are also numerous. Main mound heights of 50% of the sites fall between 2.4 m and 6.1 m (Figure 3-11).

The "typical" or "average" Mississippian main mound then is about four meters in height. This is probably taller than the average height of Mississippian platform mounds in general. Although height information was not collected for the total 1,553 mounds at the 536 sites recorded (and, of course, not all of these were platform mounds), it is possible to estimate the height of a typical platform mound. The height of the mound at single-mound sites should give a good approximation. The mean

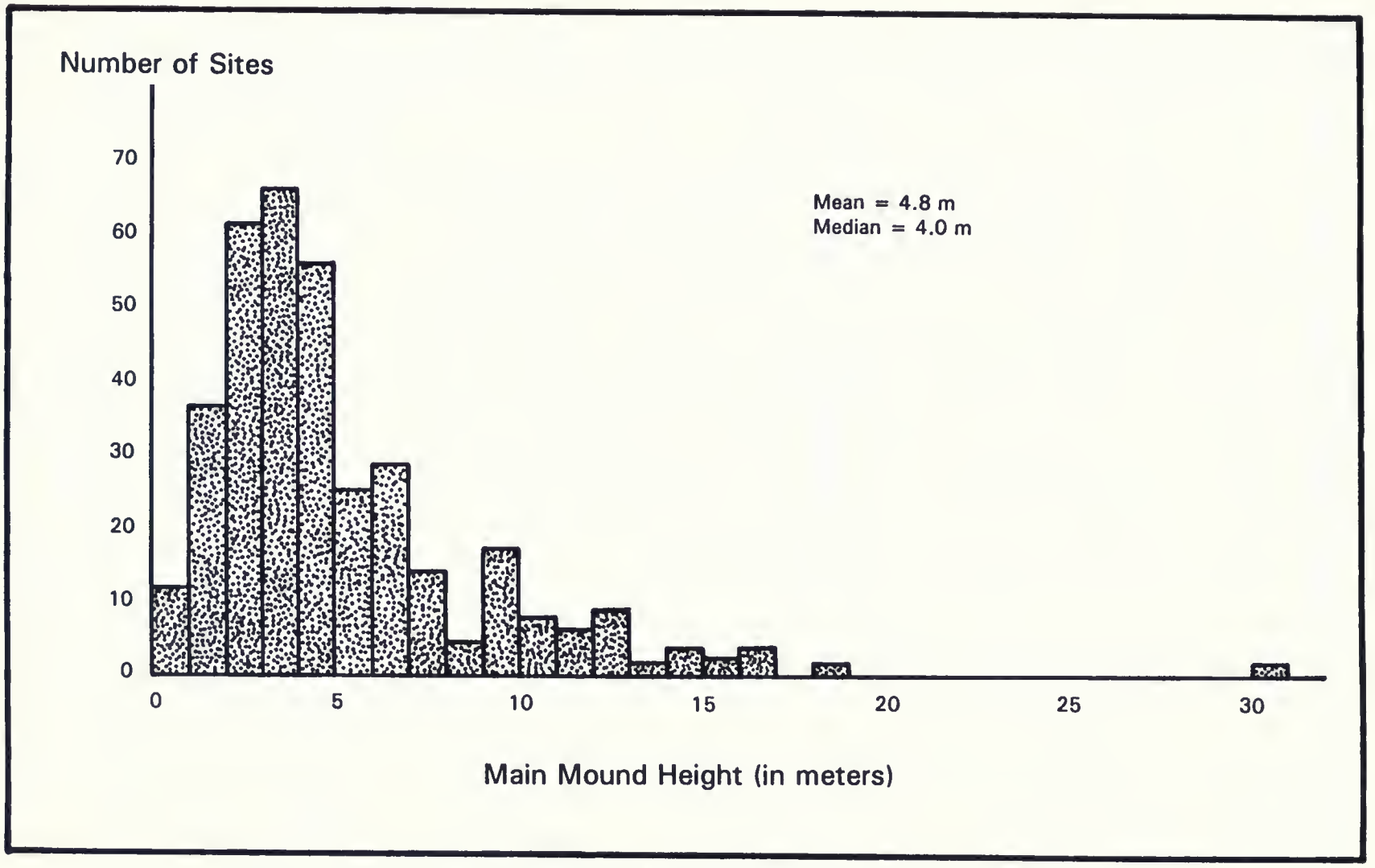

Figure 3-10. Frequency of Sites by Main Mound Height Ranges: Bar Graph.

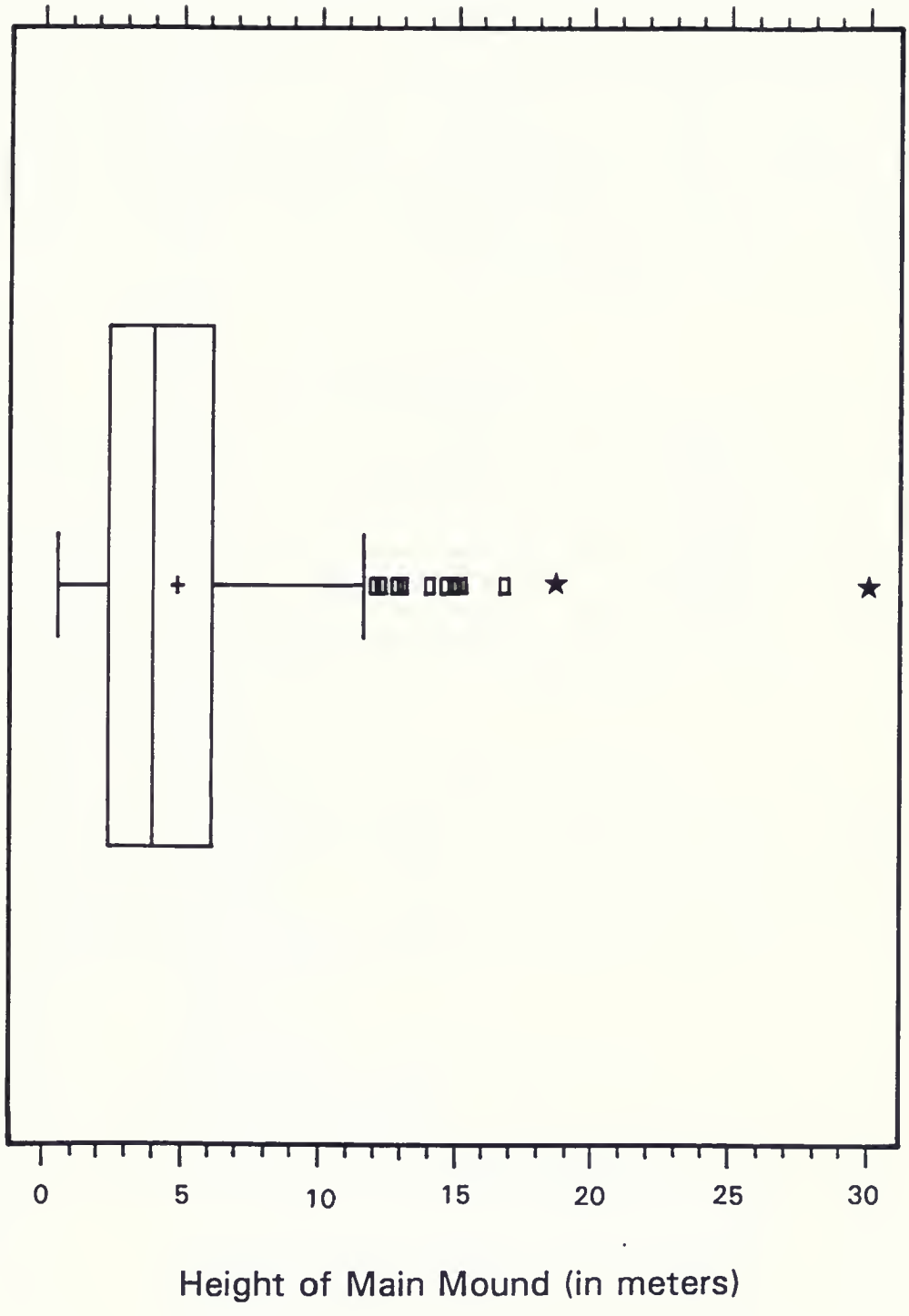

Figure 3-11. Main Mound Height: Box-and-Whisker Plot.

height of these mounds is 3.4 m, while the median is 2.9 m. The typical Mississippian platform mound therefore probably stands about three meters high, about a meter lower than the typical main mound.

The outliers seen in Figure 3-11 are listed in Table 3-3 and their geographic distribution plotted in Figure 3-12. Cahokia, as always, tops the list at 30 m. Most of the other sites are familiar as a result of appearing on the lists of largest sites for other measures of size (see Table 3-1 and the top four rows of Table 3-2), but some are new and deserve some discussion.

The curious absence of the Etowah site from the earlier largest-sites lists has been noted previously. Etowah's 6 mounds and MPA of 8.4 ha make it too small to have been included in either list. However, Etowah not only appears in this list, but its position is quite prominent, being one of two extreme outliers. Etowah's 18.6 m high main mound is second only to Cahokia's 30.0 m high Monk's Mound.

Table 3-3. Mississippian Mound Centers with Main Mounds more than 12.5 m in Height.

Mound Center	Height of Main Mound (m)
Cahokia	30.0
Etowah	18.6
Moundville	16.8
Lake George	16.8
Winterville	16.8
Anna	15.2
Ocmulgee	15.0
Jordan	14.6
Bottle Creek	14.0
Letchworth	14.0
Arcola	13.0
Florence	12.8

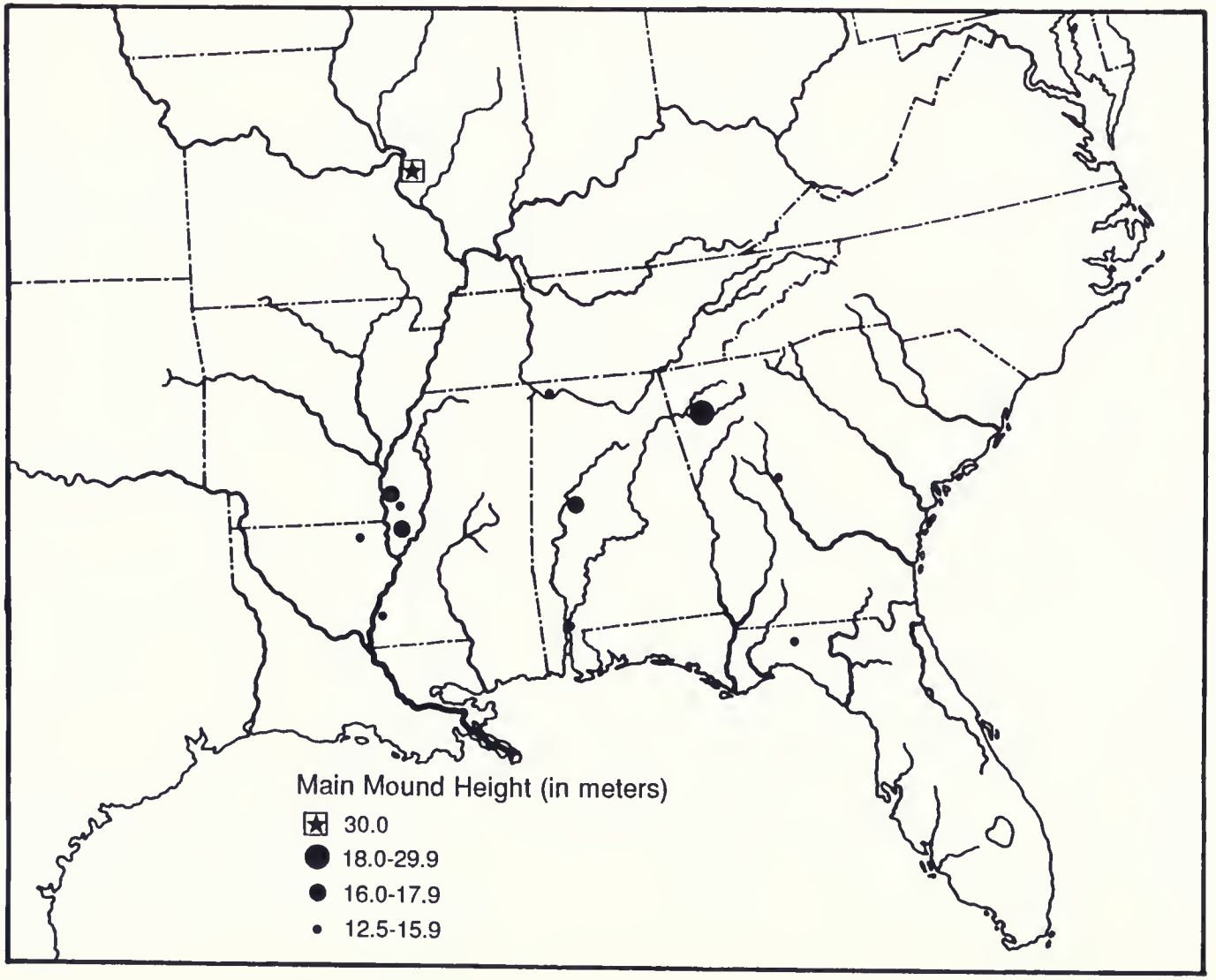

Figure 3-12. Mississippian Mound Centers with Main Mounds More Than 12.5 m in Height.

Moundville, Lake George, Winterville, Ocmulgee, Jordan, and Bottle Creek have all appeared on one or both of the earlier lists. Anna (6 mounds, 11.7 ha) and Arcola (6 mounds, 6.3 ha) are new, but not unlikely. Both contain more than the average number of mounds, and Anna has a larger than average MPA, although Arcola's is slightly below average. Both (especially Arcola which lies in the Greenville-Yazoo City region dominated by Lake George and Winterville) are located in densely populated parts of the Mississippian world where sites might be expected to be more compact, i.e., to have a low MPA and possibly fewer mounds (see Chapter 4 for more on the subject of compactness).

Two sites, Letchworth (2 mounds, main mound 14.0 m high) and Florence (1 mound, 12.8 m high), are unexpected inclusions. By the measure of number of mounds, both rank among the smallest sites. Why then do they appear here among the largest?

A box-and-whisker plot of the distribution of the heights of main mounds at one and two mound centers (Figure 3-13) suggests an answer. Letchworth and Florence appear as extreme outliers (the stars), far outside the bulk of the data (50% of which falls between 2.0 m and 4.6 m and 95% of which falls under 8.8 m). The excessive height of these mounds (nearly 2 to 3 m taller than those at any other one- or two-mound site) suggests a re-examination of the two sites for overlooked or misinterpreted characteristics (e.g., the presence of additional mounds or incorrect attribution to the Mississippian period). In this case, it seems possible that the two sites, although described by some authors as Mississippian (Walthall 1980:234; Scarry and Payne 1986:82), may date to the Woodland period as has been speculated by other researchers (V. J. Knight, personal communication 1993; Gary Shapiro, personal

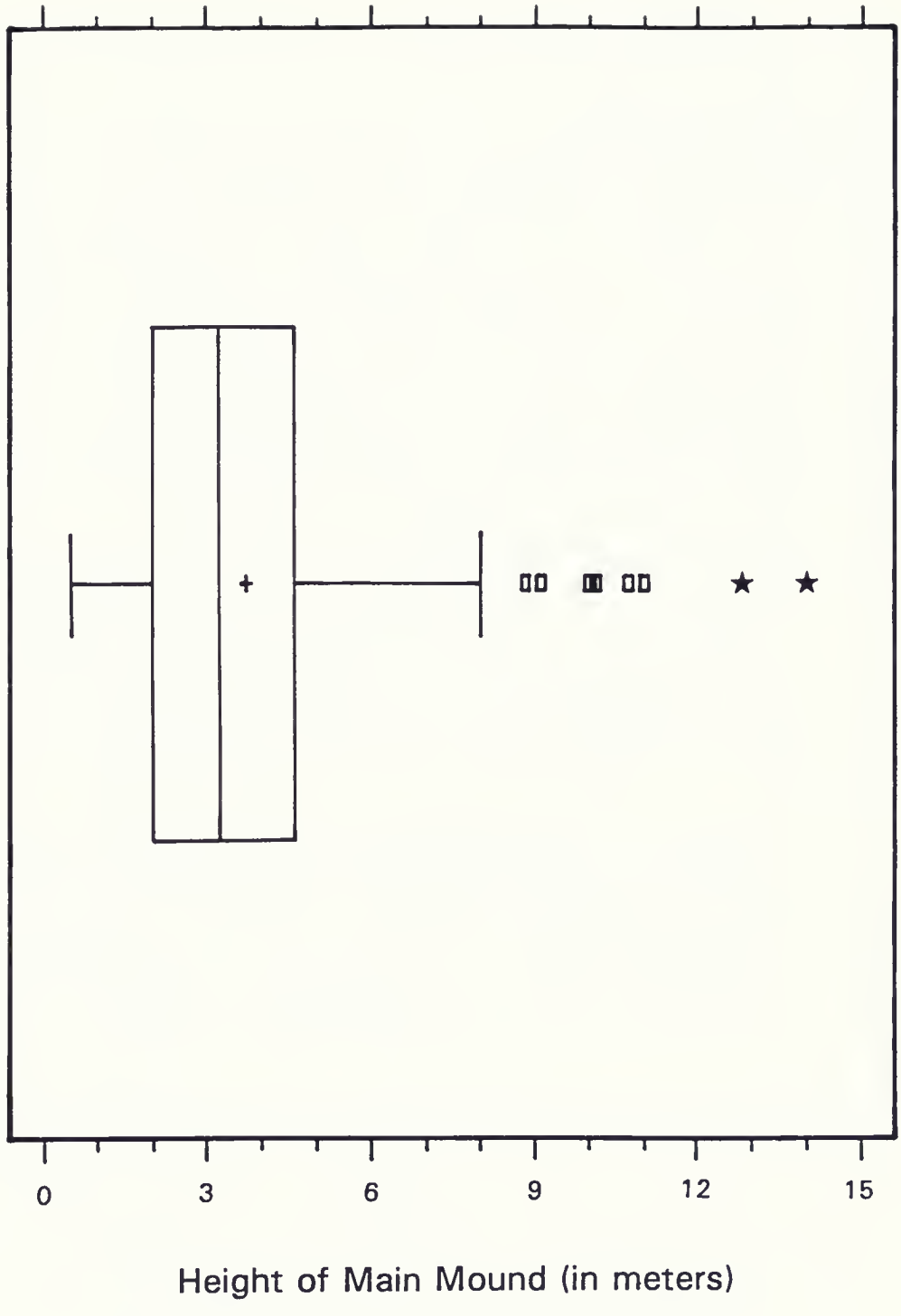

Figure 3-13. Main Mound Height for Mound Centers with One or Two Mounds: Box-and-Whisker Plot.

communication 1985). Additional archaeological investigations at these sites would clarify the issue.

Also worth noting are sites on other lists (Tables 3-1 and 3-2) which do *not* appear here. Some of these drop out due to lack of data. No main mound height information is available, for example, for the East St. Louis and Otter Pond sites. However, other omissions are not so easily explained. Nine sites (Angel, Mitchell, Kincaid, Savannah, Spiro, Rich Woods, Lilbourn, Mayersville, and St. Louis) appear on *both* previous lists but not here. Ten others missing here appear on one of the previous two lists.

The geographic distribution of the sites with the tallest main mounds is seen in Figure 3-12. The American Bottom cluster of large sites seen on the two earlier maps is here represented only by Cahokia. However, it should be noted that two sites in this area (Powell and Emerald, Illinois, both 12.2 m high) barely miss being classed with the largest sites.

The Greenville-Yazoo City cluster of sites is again represented, dominated once again by Lake George and Winterville. This time Arcola replaces Mayersville. The additional presence of the nearby (but later) Jordan site once more emphasizes the importance of this region of the Mississippian world.

Mound centers with tall main mounds seem to concentrate in the southern part of the Mississippian world (marked roughly by the southern Tennessee state line) and are, with the exception of the Greenville-Yazoo City cluster, fairly evenly distributed across this area. (If Florence and Letchworth are removed due to their problematic nature, the distribution appears slightly less even.) Especially noteworthy is the absence of large sites in the Mississippi River drainage basin north of

Greenville, Mississippi (except, of course, for the American Bottom area). This southern emphasis on height (11 of the 12 sites shown are in south) carries over into smaller size categories. Of 33 sites with a main mound of 10.0 m or higher, 26 (78.8%) are located south of the southern Tennessee state line; only 7 (21.2%) are north of this line. This pattern differs from others where the emphasis on the Mississippi River basin was clearly seen. What this southern focus illustrates, if anything, is unclear at this point.

As was seen in Chapter 2, in some parts of the world, physical height is a manifestation of high social rank (one source of authority). In the Mississippian world, the raising of residences and other structures on mounds suggests that height carried similar symbolic connotations. Mound height thus is associated with authority, as well as with power (power, of course, is an element of authority). As noted in Chapter 1, power is expressed through size and number while authority is expressed in shape and elaboration. The height of a main mound may therefore be less an aspect of size than of elaboration. If this is so, attempts to describe size using main mound height are inappropriate.

Evaluating height as a size indicator from another point of view, it is useful to look at the shape of the distribution (Figure 3-10). Before proceeding, some background is necessary. Implicit in the concept of settlement hierarchy as used by archaeologists is the assumption that large sites will be few in number while small sites will be many. Rarely is this assumption stated explicitly, but it can often be seen in illustrations accompanying discussion of settlement hierarchies (e.g., Steponaitis 1978:431). This pattern results in a distribution that is positively skewed (or skewed to the right) and has a high degree of kurtosis (i.e., long tails) (see Figure 3-2 for an

example of a distribution with these characteristics). It follows then that a criterion which accurately reflects site size will result in a distribution that is skewed to the right and leptokurtic (having a long tail). Table 3-4 lists measures of skewness and kurtosis for each of the criteria used here. For skewness, values greater than 0 indicate a positively skewed distribution. For kurtosis, values greater than 0 indicate a leptokurtic distribution. The distributions of sites by each criterion used here show both positively skewed and leptokurtic patterns. However, the distribution of height of main mounds is the least skewed and the least leptokurtic of any of the measures used here. The visual representations of the distribution seen in Figures 3-10 and 3-11 reinforce the impression that main mound height is not a good measure of site size (or that it measures something in addition to site size).

Table 3-4. Measures of Skewness and Kurtosis for Number of Mounds, MPA, Height of Main Mound, and VI of Main Mound Distributions.

Criterion	Coefficient of Skewness	Kurtosis
Number of Mounds	10.9	162.1
MPA	8.0	64.3
Height of Main Mound	2.1	8.1
Volume Index of Main Mound	15.5	249.0

Given these difficulties, main mound height is not useful as a size measure, although, as with MPA, the study of main mound height may prove valuable in exploring other topics beyond the scope of this study. One possible avenue includes an investigation of the southern emphasis on taller main mounds. Another line of research might seek to resolve the questions raised earlier about the Letchworth and Florence mounds.

Volume Index of Main Mound

One way to measure the size of a site is to determine the volume of material contained in earthworks at the site. Once time has been taken into account for earthworks constructed on an episodic basis, this amount can be used to estimate the amount of labor (persondays) needed to construct the earthworks. Volume thus becomes a measure of the amount of labor controlled by the leader. Jon Muller (1986:200-204) used just such a procedure to estimate the population needed to build the mounds at the Kincaid site. For such estimates to be useful, an accurate method must be available to calculate the volume of the often irregular Mississippian earthworks. Such techniques exist (see Shenkel 1986 for a discussion of some methods) but may require detailed information (such as an accurate contour map).

For the large survey undertaken here, readily available data are essential. Several researchers (Steponaitis 1978:446-448; Scarry and Payne 1986:82-83; Blitz 1993:46) have used a simplified measure of volume (basal length x basal width x height) that employs accessible dimensions to compare the size of mounds. This calculation is best described as a "volume index" (cf. Steponaitis 1978:446-447) and should not be taken as representing true volume nor used to calculate persondays necessary for construction. It is for use only in comparing mounds subjected to the same calculation. To distinguish this measure from true volume, thus avoiding confusion and possible misinterpretation, the product of the basal length x basal width x height calculation is here divided by 1000. To summarize, volume index as used here is calculated as follows:

(Basal Length x Basal Width x Height)/ 1000

As noted earlier, the total volume index (VI) for large numbers of sites is impractical to acquire. However, the VI of the dominant mound is much easier to ascertain and has been substituted here for total VI. It is possible to substitute main mound VI for the total VI for the following reason. The dominant mound at Mississippian sites can be identified as the site of the chief's house with some confidence. As was noted in Chapter 2, characteristics of the chief's house include larger size, prominent location, and monumental architecture. The main mound at Mississippian sites fills all these criteria. The chief's house is the place where political activities are carried out (i.e., the locus of political power and authority), and corvee labor is frequently called upon for its construction. The size of the chief's house thus indirectly reflects the amount of labor controlled by the leader. The VI of the main mound then provides a reasonable substitute for total VI.

Main mound volume index was available for 271 sites (50.6% of the total). Volume index ranges from 0.1 to 2291.1. The mean VI is 23.6, while the median is a much lower 5.6. The high average is clearly affected by the enormous size of the Cahokia main mound (Monks Mound), which at 2291.1 is 10.7 times larger than the second largest main mound VI (Etowah, 215.0). Moreover, excluding Cahokia lowers the mean VI substantially--to 15.2. The median, however, declines only slightly (to 5.5) when Cahokia is excluded. The median thus seems to describe the middle of the data far better than the mean. The values of median (5.6), lower hinge (1.8), and upper hinge (15.3) are all quite low. (The last two figures indicate that the VI of the middle 50% of sites falls between them.) This pattern again emphasizes the numerical predominance of sites with small main mound VIs (see Figure 3-14).

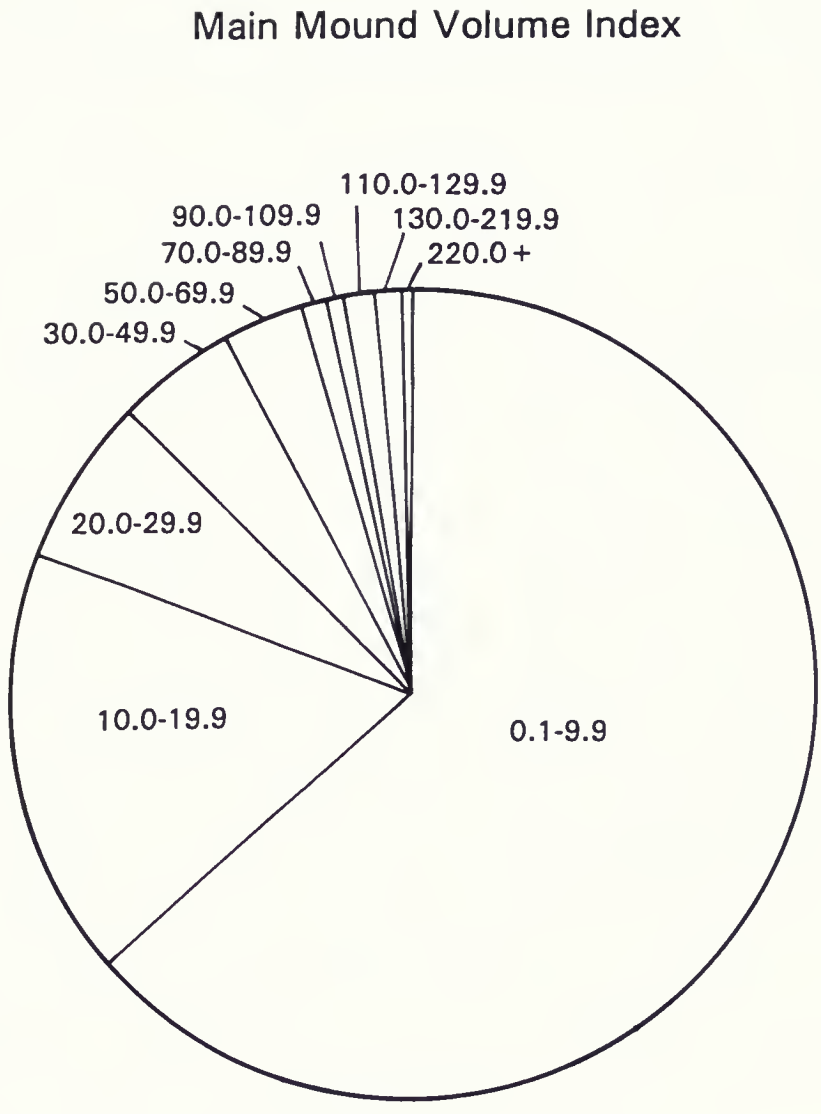

Figure 3-14. Frequency of Sites by Main Mound VI Ranges: Pie Chart.

The VIs for 28 sites lie more than 1.5 times the midspread beyond the upper hinge. These 28 outliers are listed in Table 3-5 and their geographic distribution shown in Figure 3-15.

Twenty-one of the twenty-eight sites on this list have appeared on earlier lists of largest sites. Seven new ones (Pritchard, Obion, Shoulderbone, Adamson, Mason's Plantation, Murphy Mound, and Battle) deserve some comment regarding their appearance here. These new sites all have values not far below those of the largest sites on one or more of the other lists. This is particularly true for main mound height (not surprisingly, since height forms one part of the calculation of VI). All seven have main mounds 10.0 m or taller. In addition, four of the sites (Pritchard, Obion, Shoulderbone, and Mason's Plantation) have five or more mounds. Somewhat less likely are Adamson, Murphy Mound, and Battle which have only one or two mounds each. It is possible that other factors for their inclusion (perhaps similar to those discussed for Florence and Letchworth about height) should be considered. It is worth noting, however, that Carl Chapman (1980:226) explicitly describes the Mississippian period Murphy Mound (or Carruthersville site) as "a large fortified civic-ceremonial center containing the largest mound in southeast Missouri." Additional research would be useful in these three cases.

Table 3-5. Mississippian Mound Centers with Main Mound VIs Greater than 35.0.

Mound Centers	Volume Index of Main Mound
Cahokia	2291.1
Etowah	215.0
Moundville	208.5
Angel	178.0
Winterville	126.4
Ocmulgee	124.2
Lake George	112.9
Emerald (IL)	101.9
Murphy Mound	99.4
Bottle Creek	89.6
Battle	87.3
Florence	84.8
Jordan	82.1
Pritchard	67.6
Mound Bottom	66.0
Powell	63.3
Savannah	59.7
Arcola	54.6
Lake Jackson	52.8
Mitchell	52.6
Letchworth	51.8
Kincaid	50.7
St. Louis	48.7
Obion	44.7
Mayersville	40.0
Shoulderbone	37.6
Mason's Plantation	35.9
Adamson	35.9

The map in Figure 3-15 shows the widespread distribution of sites with large main mound VIs. Large sites occur even in the far corners of the Mississippian world. In fact, almost all peripheral areas include at least one large site. It is worth noting that 15 of the 28 sites on the map lie in peripheral locations. Because peripheral sites are, in general, less numerous than central sites (see Figure 3-1), the nearly even split between central and peripheral locations for large sites suggests that sites with large main mound VIs are more likely to be associated with peripheral

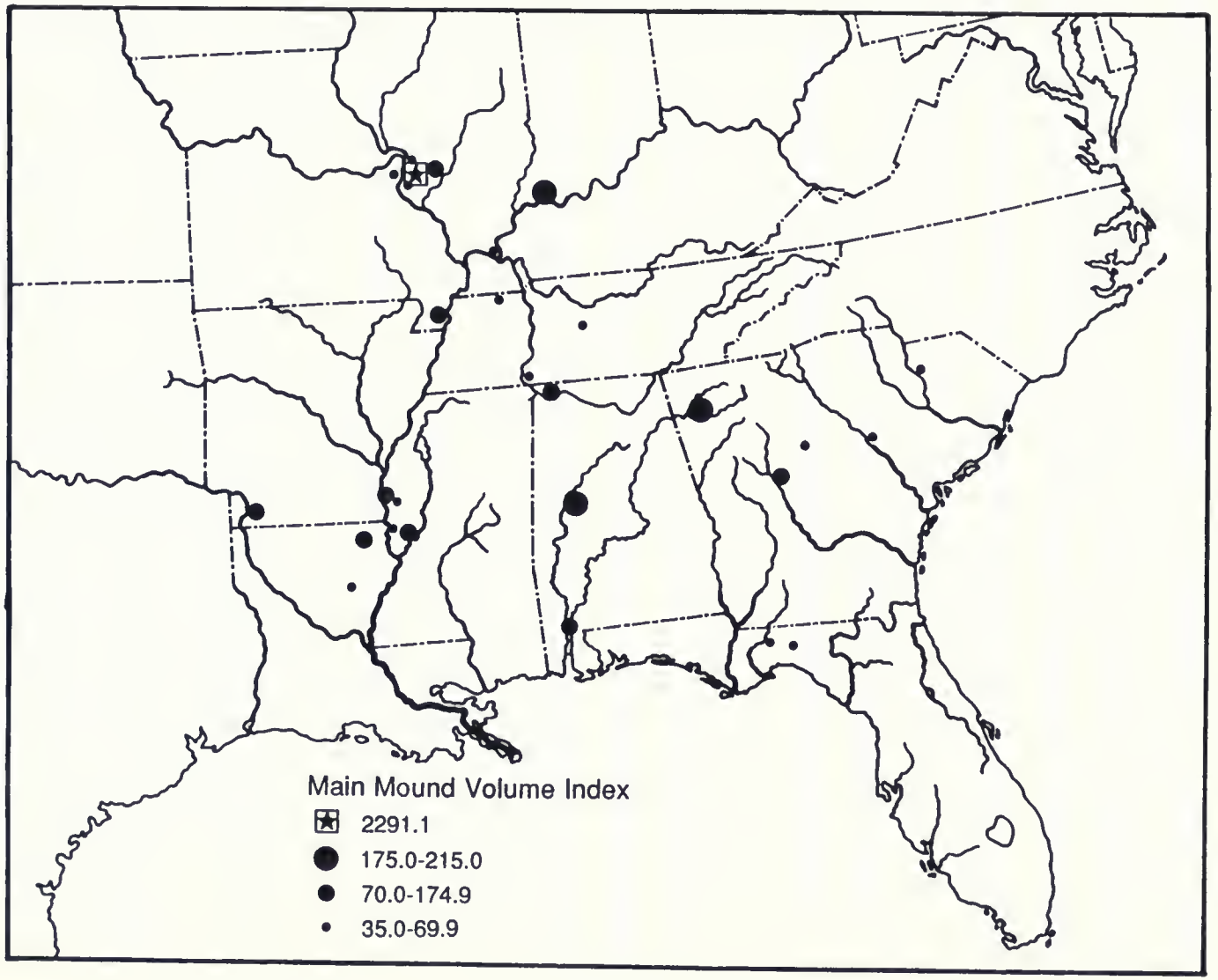

Figure 3-15. Mississippian Mound Centers with Main Mound VIs Greater than 35.0.

locations than with central ones. Why should this be? One answer may be that the ability of some leaders in peripheral locations to command the labor of larger numbers of people (and thus construct larger mounds) may have to do with greater distance from competing leaders. At the polity level, for example, it is frequently the case that powerful leaders arise near the polity borders at distances beyond or nearly beyond the practical reach of the paramount leader (Steponaitis 1978:444-449; Payne 1981). The same pattern may hold true on a regional basis as well, resulting in powerful peripheral leaders (see Scarry 1993 for additional comments on the rise of strong peripheral Mississippian polities). The nature of peripheral capitals will be considered in more detail in Chapter 6.

The map in Figure 3-15 also shows two patterns seen in earlier maps. First, the American Bottom and Greenville-Yazoo City clusters of sites seen in every map so far are still evident. And second, a southern emphasis in the distribution of large main mounds can be seen (18 of 28 sites). This emphasis is not as strong for main mound VI (65.3% southern) as it was for height of main mound (91.7% southern for the top 12 sites, 78.8% southern for the top 33 sites) but does suggest further inquiry into the pattern.

Because height is one of the components in the calculation of VI, some similarities of patterning may be expected between this measure and the last. However, great height does not guarantee a large VI or vice-versa. Mounds of similar heights may have wide ranges of VIs. This can be illustrated briefly with two examples. Sites whose main mounds stand between 4.0 and 4.9 m high have VIs which range from 0.5 to 33.4. This range (32.9) is more than twice as large as the midspread (13.4) for main mound VI for all 271 sites for which data were available.

Sites with main mounds standing between 9.0 and 9.9 m high have an even greater range (52.8)--from 6.9 to 59.7. Main mound VI also differs from height in the shape of the distribution (compare Figure 3-10 with Figure 3-16). The distribution for VI is more positively skewed and considerably more leptokurtic than that for height.

As noted earlier in this section, a clear connection exists between volume of earth in a platform mound (or an index of that volume) and labor controlled. This connection makes volume index a reasonable candidate for measuring the size of a site. However, because the volume index of the main mound has been substituted here for total volume index, this measure probably does not provide a complete picture. For example, compare the VIs for Etowah (215.0) and Moundville (208.5). Etowah's main mound VI is slightly larger than that of Moundville, but if total VI were calculated, Moundville, with 20 mounds (some quite large), would clearly have a higher total VI than Etowah which has only 6 mounds (and 3 of those are very small). As a result, main mound VI may be more useful when combined with another measure than when standing alone.

Summary

Based on the information presented above, some criteria seem better suited than others for measuring size. Site area and its variant, mound precinct area, are not useful, primarily due to variations in population density around the Mississippian world. The use of MPA, moreover, is impractical; data are available for a very limited number of sites. Nor does main mound height seem a reasonable measure. Mound height appears to express elements of authority (elaboration) as well as power (size). In addition, the distribution of sites by main mound height does not conform to a distribution expectable for a measure of size. As noted earlier, although these

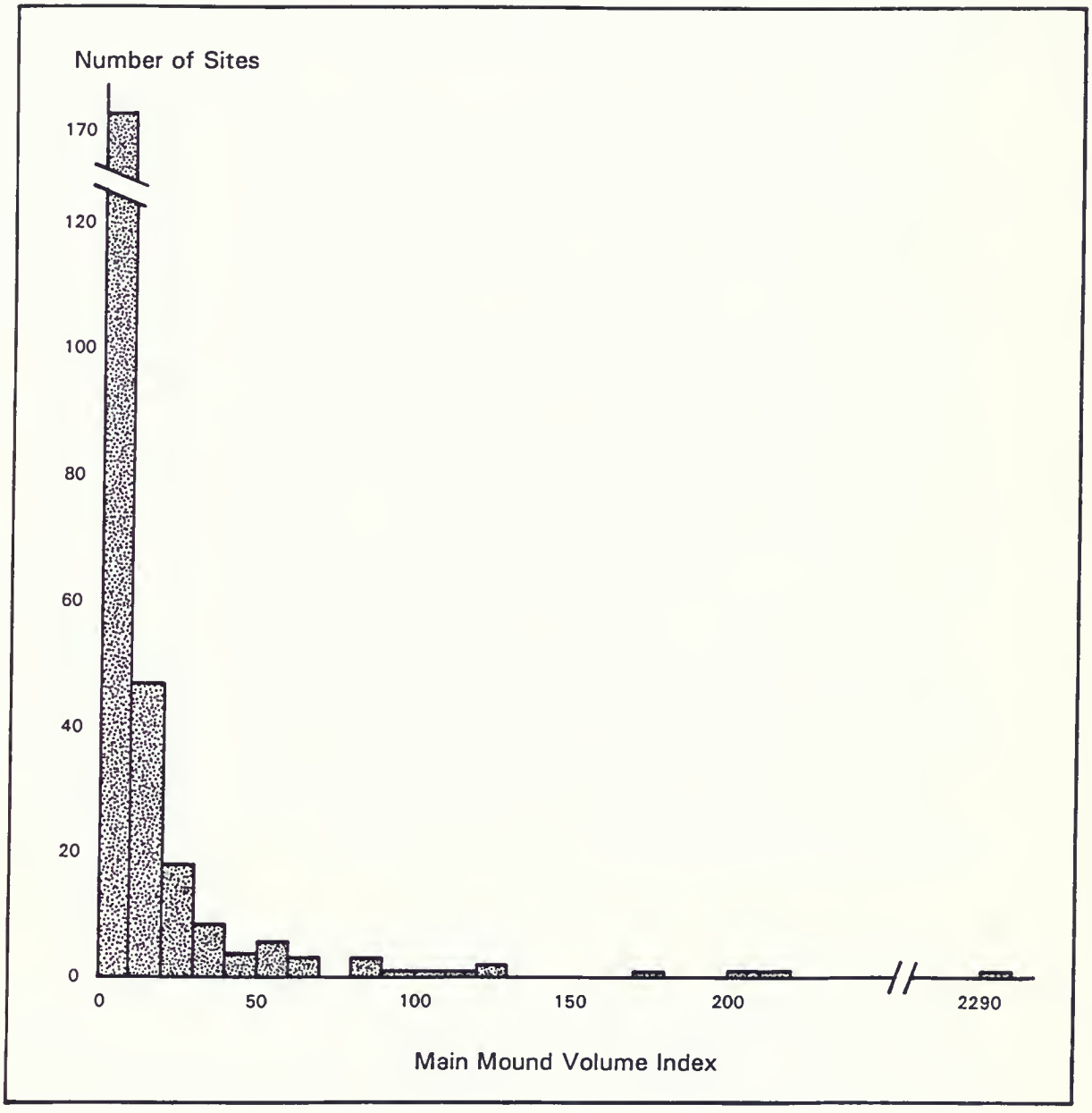

Figure 3-16. Frequency of Sites by Main Mound VI Ranges: Bar Graph.

criteria do not provide useful size measures for capitals, they do shed light on other aspects of capitals and for that reason should not be ignored.

Two criteria, mound number and main mound volume index, both appear to reflect aspects of size, but each seems incomplete. Obviously major sites (e.g., Etowah) remain unaccounted for and lesser sites (e.g., Murphy Mound) are classed as major if only one of these criteria is used to describe size. Combining the two criteria, however, leads to a very reasonable and useful overall size classification. This is illustrated by the scatterplots in Figure 3-17 (including all sites for which data were available) and Figure 3-18 (in which Cahokia has been removed to enhance clarity). Table 3-6 shows the size classification for Mississippian capitals derived from these scatterplots.

Table 3-6. Size Classes for Mississippian Mound Centers.

No. of Sites	Size Class	No. of Mounds		Main Mound VI
1	Cahokia	100	OR	2291.1
6	Very Large	20-99	OR	130.0-220.0
7	Large	13-19	OR	100.0-129.9
24	Medium-Large	8-12	OR	44.0-99.9
47	Medium-Small	4-7	OR	30.0-43.9
39	Small	1-3	AND	9.5-29.9
144	Very Small	1-3	AND	0.1-9.4

Note: A site should be placed in the largest category into which it falls.

To determine the placement of an individual site, start from the bottom and work up; the site goes into the largest possible category. For example, the

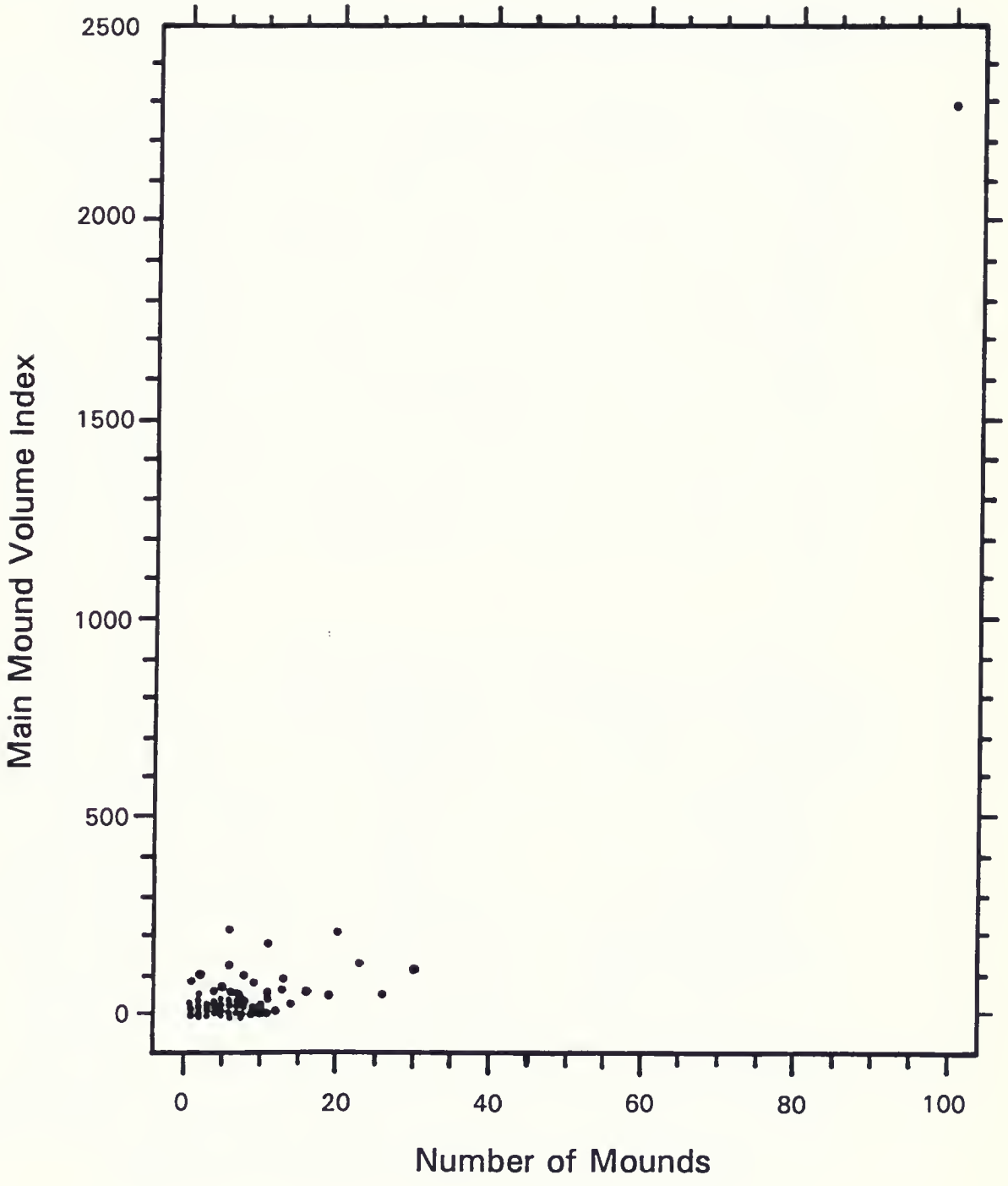

Figure 3-17. Number of Mounds vs. VI.

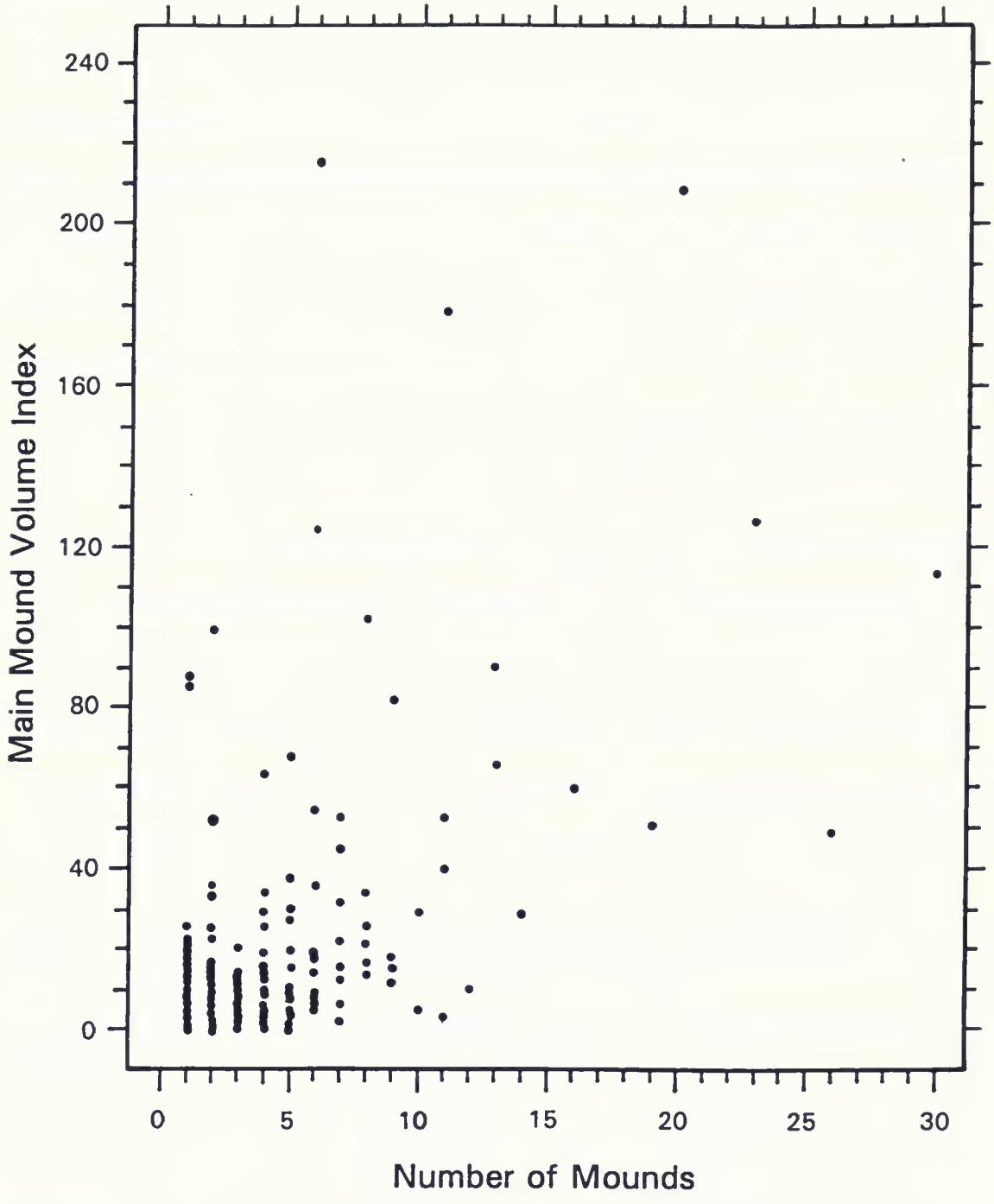

Figure 3-18. Number of Mounds vs. VI (excluding Cahokia).

Cumberland River valley Sellars site (2 mounds, VI of 5.4) fulfills both conditions (1-3 mounds, VI of 0.1-9.4) for a Very Small site. The Adamson site in South Carolina also has two mounds, but its main mound VI of 35.9 bumps it up into the Medium-Small category. Conversely, the eastern Oklahoma Harlan site has a VI of only 8.4 (Very Small), but its five mounds push it up into the Medium-Small category. Both number of mounds and main mound VI are thus taken into account in assigning a given site to a size category.

A list of the largest sites by overall size includes Cahokia (which is given a classification of its own due to its extreme size), six Very Large sites, and seven Large sites (see Table 3-7). Some sites described as large by mound number do not appear here (e.g., East St. Louis, Otter Pond, Williamson). This is due to missing data on the VI of the main mound. On the basis of number of mounds, East St. Louis (45 mounds) could be expected to fall into the Very Large category. The classification of other sites with data on only one criterion is less clear-cut. For this reason, only those sites for which both measures exist have been included here.

Table 3-7. Largest Mississippian Mound Centers According to Size Classes.

Size Class	Sites	
Cahokia	Cahokia	
Very Large	Moundville Lake George Winterville	St. Louis Etowah Angel
Large	Kincaid Savannah Rich Woods	Bottle Creek Mound Bottom Emerald, Illinois Ocmulgee

The omission from the list of one famous site is worth considering briefly. The Spiro site ranks here as a Medium-Large site despite its frequent description as a large or major Mississippian site (Peebles and Kus 1977:434; Neuman 1984:277; Walthall 1980:185). The omission here is due to the fact that the site's importance rests more with the significant Southern Cult collection of artifacts recovered there than with the site's size. The omission of Spiro from the ranks of the largest Mississippian mound centers does not, however, deny its importance. Spiro and the 23 other Medium-Large sites deserve considerable attention due to their relative rarity and their potential regional importance. In addition, Spiro's location at the edge of the Mississippian world further enhances its importance.

The map in Figure 3-19 shows the distribution of the sites listed in Table 3-7. As in all previous maps describing individual criteria, clusters of large sites appear in the American Bottom and Greenville-Yazoo City regions. Also as in all previous maps (except one), a gap occurs in the central Mississippi River valley (more on this gap below). The distribution of largest sites appears fairly evenly distributed across the Mississippian world. Eight sites lie in the north, six in the south; eight sites are centrally located, while six sites lie in peripheral locations.

A fairly regular distance exists between neighboring sites and is worth considering briefly. Although the distance between sites ranges from 20 km to 475 km, the average distance is 235 km, the median distance is 220 km, and 41% of the values lie between 195 and 240 km. These figures suggest that some factor (perhaps social, economic, or political) influences the spacing between major sites. Based on data from the Fort Walton area, John Scarry has speculated that a distance of about 200 km is the limit of the indirect influence of a capital (personal communication

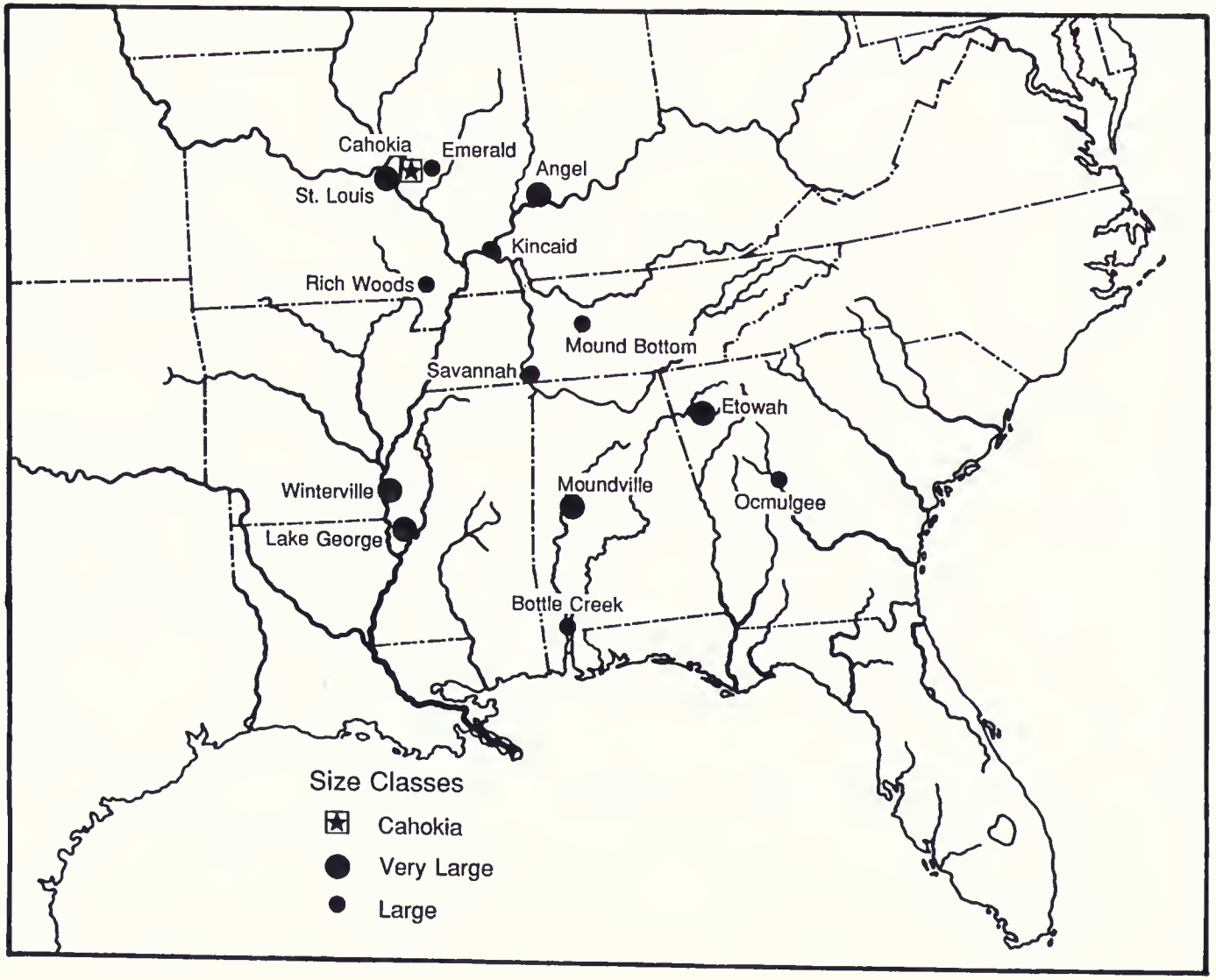

Figure 3-19. Largest Mississippian Mound Centers According to Size Classes.

1993). The distances cited here suggest that Scarry's estimate holds for major Mississippian capitals as well. The reason for this 200 km limit of influence may have to do with transportation costs. Historian A. D. Crown (1974:265-266) claims that foot couriers in the ancient Near East could conceivably travel up to 100 km per day but could maintain this grueling pace for no longer than two days. Under less extraordinary circumstances, two hundred kilometers represents, at minimum, four days travel for a fast courier on unobstructed transportation routes (larger forces travel much more slowly, of course--often less than half this speed) (Swanton 1985:104; Crown 1974:265). In general, an infantry force can carry no more than three or four days of food and water with them (Engels 1978:21). The same may hold true for individual couriers or small groups. Two hundred kilometers then may be the maximum extent a capital can expect to extend its influence in the absence of pack and draft animals, wagons, or mechanized transport.

Potential spheres of influence for these large Mississippian mound centers can be hypothesized by constructing Thiessen polygons around the sites. Hypothetical territories are delineated by drawing lines at right angles at the mid-points between neighboring sites (Orton 1980:192). Every point within a territory so constructed is nearer to its center than to any other center. These Thiessen polygons are unweighted and consequently do not take into account center size or any possible settlement hierarchies. Nonetheless, the resulting configuration, when applied to the Mississippian world, shows several interesting patterns and provides food for thought. Before continuing this discussion it is important to reiterate the heuristic and speculative nature of this exercise. For a number of reasons, including the varying time periods during which these sites were occupied (more about which shortly), the

territories created should not be taken too seriously. The hypothetical territories shown in Figure 3-20 are primarily intended to stimulate questions, not to force territorial boundaries onto the map of the Mississippian world.

A few comments on time are in order before discussing the patterns seen in the map. Most of the sites seen here were occupied for long time spans, often through most of the Mississippian period. Thus the time ranges for individual sites, though not coincident, do overlap considerably. For example, with three exceptions, all sites were occupied between A.D. 1200 and 1350. Some, of course, began earlier, some continued later, but all were in operation during this 150-year time span. Moreover, in most cases, the florescence of each site falls in or near this time period (50 to 100 years earlier for Cahokia and perhaps St. Louis). The three exceptions noted above are the middle Tennessee River valley Savannah site, for which adequate chronological data are unavailable, and the Ocmulgee and Emerald, Illinois sites. The Ocmulgee site, long an enigma to archaeologists, remains so here. The site apparently had a very short span of existence near the beginning of the Mississippian period (Hally and Rudolph 1986:32-35). Conversely, the Emerald site seems to date to late in the Mississippian period (after ca. A.D. 1400) (Milner 1990:32). Interestingly, in light of the comments in the previous section, these two inconsonant sites account for some of the most extreme distances between neighboring sites: Ocmulgee lies 475 km from Bottle Creek while Emerald is only 30 km from Cahokia. The reader should keep these chronological constraints in mind when considering the patterns noted below.

The territories seen in the map generally present expectable patterns based on what is known of the Mississippian period. Territories often conform to coherent

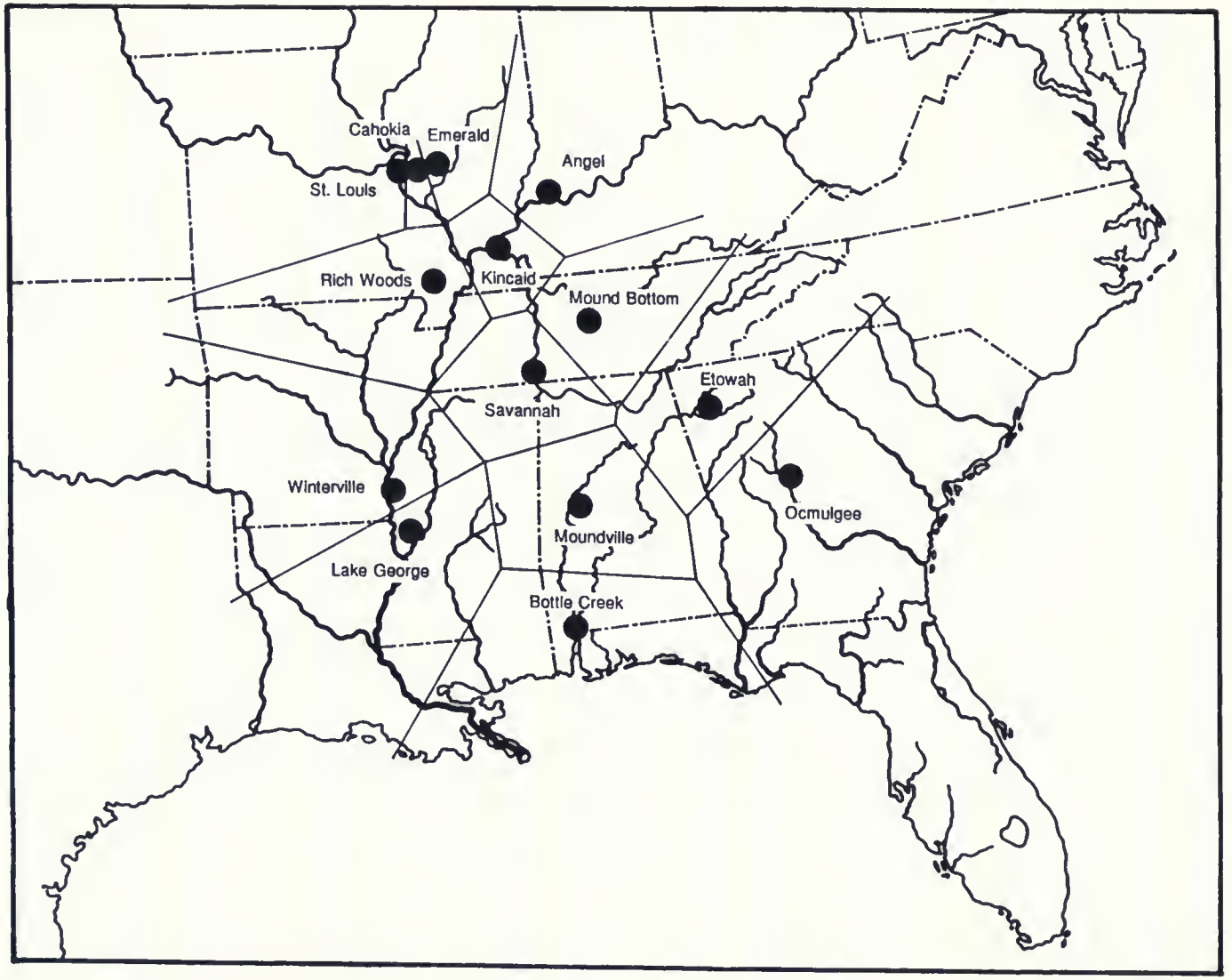

Figure 3-20. Hypothetical Spheres of Influence for the Largest Mississippian Mound Centers.

research areas (e.g., the upper Tennessee Valley and adjacent Piedmont, the American Bottom, the Tombigbee-Alabama drainage, the Cumberland valley).

One point displayed clearly by the map is the importance of the (until recently) little known Bottle Creek site to the Gulf coast. Fortunately, the state of knowledge at this important site is improving daily; a major project undertaken by the Alabama Museum of Natural History began in the summer of 1993.

The territory centered on Etowah (the upper Tennessee Valley and Appalachian Piedmont) is reminiscent of the later sixteenth century "chiefdom of Coosa" as described by Charles Hudson and his colleagues (Hudson et al. 1985; Hally 1994). This geographic similarity (although not an exact match) suggests that what Hudson and the others view as a "chiefdom" (i.e., a single polity) may perhaps be seen more accurately as a sphere of influence, perhaps in the form of a loose confederacy of several autonomous polities of which Coosa was the largest and most important. Similar political configurations commonly occur in areas where chiefdoms are present (cf., for example, the Alur chiefdoms of East Africa [Southall n.d.]).

The middle Tennessee Valley is here dominated by the virtually unknown (and very sparsely documented) Savannah site (Thruston 1973:42-45) which was destroyed prior to the end of the nineteenth century (Moore 1915:221). This part of the Mississippian world has been woefully neglected by researchers and deserves greater attention in the future. In particular, the nature and role of the Savannah site need to be clarified if possible.

The tiny size of Cahokia's territory (the middle of the three small American Bottom territories) may come as a surprise but in fact is easily explained. The small territory undoubtedly results partly from the use of unweighted polygons (i.e., they

do not take site size into account; in other words--the Very Large St. Louis site could be subordinate to the enormous Cahokia site) and partly from sites having been occupied at different times (i.e., the Emerald site seems to have been occupied after the height of Cahokia [Milner 1990:32]). A clearer picture of Cahokia's territory or of the later Emerald territory could be gained by lumping the three small areas shown here, creating a territory that encompasses the far northwestern reaches of the Mississippian world.

The splitting of the Lower Mississippi Valley between Winterville and Lake George (a scant 90 km apart) cannot be explained so easily. The two sites are very similar in size, suggesting that one was not subordinate to the other. Moreover, both seem to have covered roughly the same time period (Williams and Brain 1983:375-381). Perhaps the dense population of the region permitted the development and co-existence of two such major mound centers within a short distance of each other.

The domination by Rich Woods of a 300 km stretch of the Mississippi River also presents a puzzle, especially with the territory's southern border cutting right through a very heavily populated section of the Central Mississippi Valley (that area mentioned earlier as lacking a major mound center). This pattern suggests that information on large sites is incomplete for the Central Mississippi Valley. Postulating incomplete coverage for such a heavily surveyed area seems odd, but this area has also seen much destruction (Jeffrey Mitchem, personal communication 1993), perhaps distorting the database. The presence of a large site in this area would result in a division of the valley into more reasonable regions. Two other features of the geographic distribution of large sites suggest a missing site here. First, the distance from Rich Woods to its next neighbor to the south (Winterville) is 380 km; halved (190

km), this results in a figure very close to the 200 km noted above as a possible maximum limit of influence of a major site. Second, the Savannah (middle Tennessee) territory extends in an unlikely manner all the way to the Mississippi River to encompass a few sites far distant from the bulk of the sites in the territory. These two features bolster the argument for the presence of an unidentified major site in northeastern Arkansas. One candidate may be the Williamson site (9 mounds) for which information on main mound VI is unavailable.

In conclusion, it is important to keep in mind the heuristic nature of the classification presented here and the temporal limits within which it is constructed (i.e., covering the entire Mississippian period). The purpose of creating such a classification has been to establish a framework for discussion, to develop a common terminology, and ultimately to create a Mississippian-worldwide perspective on the size of mound centers. The need for an overall perspective can be seen in two brief but striking examples. These illustrations are not intended as criticisms of the researchers cited but to demonstrate the problems that may arise in the absence of an overall perspective on size of mound centers.

In a recent article on the Mississippian period in west-central Alabama, Tim Mistovich (1988:21) referred to "*major centers* such as Moundville, Lubbub, and Bessemer" (emphasis added). Mistovich's grouping of the Very Large Moundville site with two Very Small sites may have resulted from the absence of a Mississippian-worldwide framework within which to consider the sizes of these three sites. Moundville, of course, is indeed a major site, but the Very Small Lubbub and Bessemer sites fall at the opposite end of the spectrum from Moundville. Although both sites were indeed among the largest in west-central Alabama, they were

undoubtedly minor local centers in their own time and in no way comparable in power to Moundville. Mistovich's description also points up the fact that sites may be considered "major" because they are major sources of data for archaeologists (as is the case with the three sites noted above), even though they may not have been major sites in their own time and setting.

Table 3-8. Size of Adams Site Compared with that of Lake Jackson Site.

Criterion	Adams (Lewis describes as "large")	Lake Jackson (Payne describes as "medium")
Number of Mounds	6	7
MPA	5.1 ha	19.0 ha
Height of Main Mound	6.0 m	11.0 m
VI of Main Mound	18.0	52.8
Size Class	Medium-Small	Medium-Large

The second example illustrates potential difficulties resulting from the lack of common terminology and again from the absence of an overall mound center size framework for the Mississippian world. I have, on occasion, described the Lake Jackson site as "medium-sized" (Payne 1989; Payne and Scarry 1990). Conversely, Barry Lewis (1990:46) has described the Adams site in western Kentucky as "large." Table 3-8 lists the characteristics of both sites by all the measures examined in this chapter, including overall size class. With this comparison at hand, it can be seen that the "medium-sized" Lake Jackson site is actually larger than the "large" Adams site on all counts. This comparison is not intended to establish some sort of precedence for the Lake Jackson site but to point out that different researchers working in separate areas may apply variable terminology to the description of sites. The lack of either an

overall size framework or a common language of size may thus lead to misunderstandings between researchers and perhaps prevent profitable discussion. The value of an overall perspective, such as that presented in this chapter, clearly lies in enhanced communication.

CHAPTER 4
MISSISSIPPIAN CAPITAL VILLAGES, PART 2: THE STRUCTURE OF THE CAPITAL

The survey reported in Chapter 2 showed that structural elements in chiefly capitals provide information on the nature of power and authority within chiefdoms. In this chapter the structure of Mississippian capitals and what that structure says about Mississippian power and authority are explored. Structural elements considered here include site layout, site orientation, the chief's house and storage facilities, religious structures, communal structures, public spaces, and internal and external walls. Let us begin by looking at site layout.

Layout

Determining the layout of a capital requires data on the placement of houses and other structures. Although these data are available (at least in part) for some Mississippian mound centers (e.g., Angel [Black 1967]), little detailed information exists for most sites. Data on the placement of mounds, however, are relatively accessible through site plans. The arrangement of the mounds is not a perfect reflection of settlement layout but does provide some useful information. Consequently, mound precinct layout is substituted here for site layout.

Type of Plan

Conventional wisdom holds that Mississippian mound centers consist of mounds surrounding a plaza or public space (see, for example, Reed 1973:35). Although the location and extent of plazas can only be determined through subsurface archaeological investigations, the architectural spaces created by the placement of mounds can give a general idea of the locations of plazas. It is possible then to describe site plans on the basis of the arrangement of mounds and the resulting architectural spaces.

Enclosed-central-space plan. An "enclosed-central-space plan" is the term given here to the arrangement in which mounds surround an architectural space (see Figure 4-1). On occasion this architectural space is not empty but contains a mound (e.g., as at Moundville). Examination of plan views for 91 mound centers (all with three or more mounds) revealed that 30 sites (33.0%) exhibit an enclosed-central-space plan (although some, especially the larger ones, contain additional elements). Another 37 sites (40.7%) have a "modified enclosed-central-space plan" in which the central architectural space is partially enclosed by mounds (see Figure 4-1 for an example). Thus 73.7% of the 91 mound centers generally consist of mounds enclosing open spaces, bearing out conventional wisdom.

Other plans. Other arrangements also occur at Mississippian sites, sometimes in combination with one of the more traditional plans described above. Patterns are not always easily discerned, however. Some sites (especially ones with only three or four mounds) exhibit a clear linear arrangement (e.g., Bessemer, Fatherland, Peter Bess) (see Figure 4-1). Others (usually larger sites) show what might be described as a gridded plan (e.g., Lake George, Lake Jackson) (see Figure 4-1). Some sites include

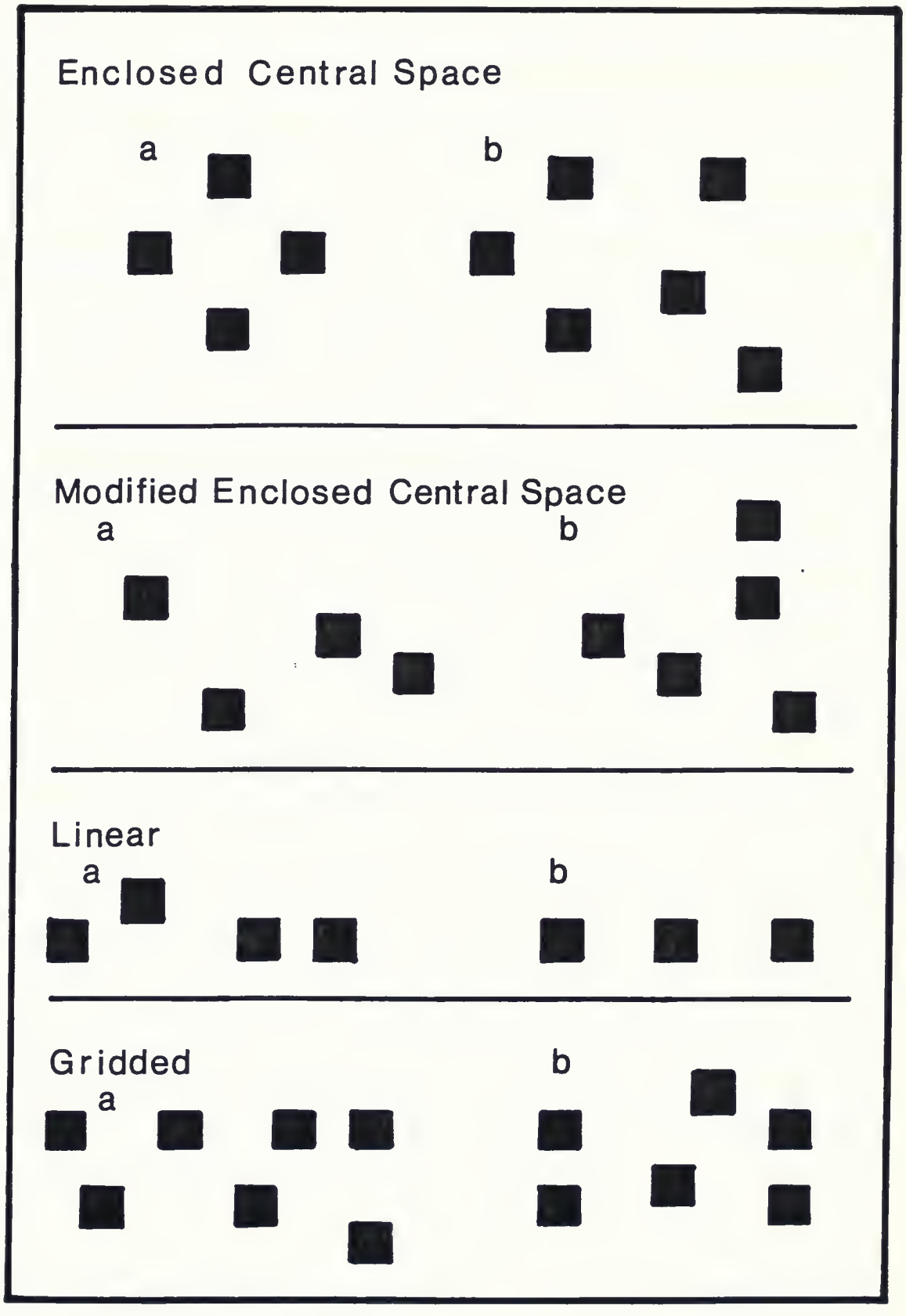

Figure 4-1. Schematic Mound Center Plans.

multiple clusters of mounds (e.g., Cahokia, Kincaid, Rich Woods), often combining two or more plans. A few sites consist of a main precinct and one or two outlying mounds (e.g., St. Louis, Mitchell, Lake Jackson). Others defy ready description (e.g., Angel, Emerald [Illinois], DeGraffenreid). More than one pattern can and does occur at the same site.

Alignment of mounds. Sometimes the site plan, even if classifiable, seems somewhat chaotic, as if the site just grew through time with no guiding principles (a distinct possibility for some sites which have several-hundred-year histories). One way to study the apparent chaos is to look at how the mounds relate to each other. Nelson Reed (1973:35) has noted that mounds at mound centers are often aligned to each other (e.g., parallel or perpendicular to each other). Information from 91 sites bears out this statement. At 49 sites (53.8%), mounds were clearly aligned with each other. At 14 sites (15.4%), mound placement showed no relationship to that of other mounds. At 28 sites (30.8%), both characteristics were present (i.e., some parts of a site show aligned mounds, other areas show non-aligned mounds). The impression of chaos gained from looking at overall site plans thus diminishes when individual components or sections of sites are examined.

To see if the number of mounds present at a site might affect the likelihood of alignment of mounds, the median number of mounds was calculated for each category (aligned, non-aligned, and composite). For sites with aligned mounds and those with non-aligned mounds, the medians were very close, 5 and 5.5 mounds respectively. For sites with characteristics of both, however, the median was higher: seven mounds. Though the difference seems small, it does hint that as number of mounds increases, variability in alignment increases. The greater variability could

result either from non-aligned mounds being added to aligned arrangements, or it could result from the opposite: aligned mounds added to non-aligned arrangements. To consider which might be the case here the range of number of mounds and the percentage of sites with 10 or more mounds were computed for the aligned and non-aligned categories. Aligned sites have a wider range (2 to 100 mounds) than non-aligned sites (2 to 11 mounds). The aligned category also includes a higher percentage of sites with 10 or more mounds (10.2%) than does the non-aligned category (7.1%). Indeed, the aligned category includes some of the largest sites known (e.g., Cahokia, Lake George, Winterville). These figures suggest that the larger sites become (in number of mounds), the greater the likelihood for alignments of mounds. This implications of this conclusion are discussed in more detail later in this chapter.

Compactness of Layout

As noted in Chapter 3, the mound precinct area (MPA) of 66 Mississippian mound centers ranges from 1.3 to 810 ha. Factors other than site size or number of mounds present appear to influence the extent of a site's MPA. Some factors that might affect the dispersion or compactness of mound precincts include topographical restrictions, distribution of arable land or other resources, defensive needs, and population density. Exploration of the effects of the first two factors is beyond the scope of this study. It is possible, however, to consider the effects of defensive needs and population density. For practical reasons, fortified settlements may be more compact than unfortified ones; it is faster and more efficient to build a wall around a smaller rather than a larger area. Also as noted earlier, dispersed settlement patterns

exist in some parts of the Mississippian world, nucleated patterns in other parts. Dispersed and compact mound centers may also show regional patterns.

Determining compactness. The first step in discerning any patterns is to determine the compactness of mound centers. One way to determine compactness is to divide MPA by the number of mounds present. The resulting figure[1] is an index of the compactness of the mound precinct:

MPA / Number of Mounds = Compactness Index

The Lake George site, for example, has an MPA of 23.2 ha and 30 mounds, resulting in a compactness index of 0.8. The lower the index, the more compact the site is and vice-versa.

Compactness index ranges from 0.2 to 8.1, with a median of 1.1. Sites with indices of 1.0 and lower are considered compact sites; sites with indices of 1.1 and higher are considered less compact or more spread out.

Compactness and size of site. To consider whether compactness is related to size of site (i.e., are small sites typically compact and large sites spread out?), data were categorized by the size classes defined in Chapter 3. The 66 sites in this sample fall into the top five size classes (Small and Very Small are not represented) and an indeterminate size category. Table 4-1 lists the median, minimum, and maximum values for each category along with those for all sites (the largest size category, Cahokia, is not included here because it contains only one site). The medians for all categories but one (Large sites) are very similar to the median for all sites. No pattern

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[1] The same constraints involved in working with MPA apply here. Because determining MPA was limited to sites with four or more mounds, the smallest mound centers are not represented. Also, reasonably accurate site plans were necessary for determining MPA, limiting the sample to 66 sites.

of increase or decrease in median with increasing or decreasing site size is evident. Nor does any rising or falling trend for minimum or maximum values appear. Thus, compactness does not seem to be a factor of the size of sites. Both large and small sites may be compact, and both large and small sites may be spread out.

Table 4-1. Compactness Indices of Mound Centers by Size Class.

Size Class	Median	Minimum	Maximum
Very Large	1.1	0.7	4.3
Large	1.7	0.8	6.8
Medium-Large	1.0	0.4	4.5
Medium-Small	0.9	0.2	3.1
Indeterminate	1.1	0.3	2.0
All sites	1.1	0.2	8.1

Compactness and fortifications. As noted earlier, the need for fortifications may result in a more compact site than if no defensive need exists. To determine if fortified mound centers are more compact than unfortified sites, each of the 66 sites was classed as one or the other. Fortified sites contain ditches, embankments, or palisades. Unfortified sites contain no ditches, no embankments, and no known palisades. Because the presence of a palisade is usually determinable only through excavation, the absence of a known palisade at a site may mean that inadequate data exist rather than that a site is not fortified. A certain percentage of unfortified sites may thus turn out to be fortified upon more detailed investigation. The reader should keep this fact in mind when reviewing the data.

Of the 66 sites, 22 (33.3%) are known to be fortified and 44 sites (66.7%) are apparently unfortified. Table 4-2 lists the median, minimum, and maximum

compactness indices for fortified sites, for unfortified sites, and for all sites. If fortified sites are more compact than unfortified sites, the median, minimum, and maximum values should be appreciably lower for fortified sites. This does not appear to be the case. Although the median compactness index for unfortified sites is slightly higher than for fortified sites (indicating slightly more dispersed mound centers), both values are very close to the median for all sites. The minimum and maximum values are both higher (less compact) for fortified sites than for unfortified sites, the opposite of what is expected. These results may be interpreted in one of two ways. First, fortifications play no part in the compactness or dispersal of a site. Or, second (and perhaps more likely), fortifications not presently known exist at sites classed here as unfortified, skewing the results of this analysis.

Table 4-2. Compactness Indices of Mound Centers by Presence or Absence of Fortifications.

Type of Site	Median	Minimum	Maximum
Fortified	0.9	0.4	8.1
Unfortified	1.2	0.2	6.8
All sites	1.1	0.2	8.1

Compactness and geographic location. To understand whether geographic location influences the compactness of a mound center, sites were classed as occurring in central or peripheral locations within the Mississippian world. Of the 66 sites, 49 (74.2%) are central, 17 sites (25.8%) are peripheral.

Eight of the ten most dispersed sites lie in peripheral locations, while nine of the ten most compact sites lie in central locations. Table 4-3 lists the medians and the minimum and maximum values for sites in both settings and for all sites. Clear

differences exist between sites in central locations and those standing at the edges of the Mississippian world. Peripheral sites are much more spread out, having a median compactness index of 2.1, two times larger than the median (0.9) for central sites. Moreover, minimum and maximum values are higher for peripheral sites than for central ones. Sites in central areas thus appear to be more compact, while sites in peripheral areas are more spread out. This distinction may result from higher population density in central areas, a feature that can be seen in Figure 3-1 which shows the distribution of mound centers. The difference may also be partially related to a lower need for defense in less heavily populated areas; only 17.6% of peripheral sites in this sample are known to be fortified versus 38.8% of central sites[2].

Table 4-3. Compactness Indices of Mound Centers by Geographic Location.

Site Location	Median	Minimum	Maximum
Central	0.9	0.2	2.8
Peripheral	2.1	0.6	8.1
All sites	1.1	0.2	8.1

Summary

As many archaeologists have already noted (e.g., Willey and Phillips 1958:163; Reed 1973; Walthall 1980:185), Mississippian mound centers (at least those with three or more mounds) typically exhibit some form of an enclosed-central-space plan (i.e., mounds surrounding an architectural space). Other plans include linear, gridded, and multiple-cluster layouts.

[2] In a larger sample of sites (including the 66 here and 66 sites for which MPA and compactness index were not available), it was found that 24.2% of peripheral sites were fortified compared to 39.4% of central sites (see the section on walls below).

A high proportion (84.6% of a sample of 91 sites) of Mississippian mound centers show some degree of alignment in the placement of mounds (i.e., mounds are parallel or perpendicular to each other). The likelihood of alignment appears to be higher in larger sites than in smaller ones.

If this conclusion is correct, it indicates something about the nature of growth at Mississippian capitals. Non-aligned mounds added to aligned arrangements suggest individual-directed growth (similar to suburban sprawl), a lack of an overall controlling authority regarding the construction of mounds. Aligned arrangements suggest the presence of a central control or authority. Aligned mounds could result from actual direction of construction by a central authority, or they could result from nobles wanting to take on some of the authority of the ruler and so aligning their mounds to the principal one to demonstrate their own reflected authority. Aligned mounds added to non-aligned arrangements thus suggest an increasing central control or authority (from an earlier more individual-directed arrangement). A formal arrangement may not, therefore, mean that the site was planned at one time (as is sometimes concluded). Rather, a high degree of formality or alignment may be the embodiment of a high degree of continuing central authority.

The compactness of sites was examined in an attempt to discern any patterns. A wide range of compactness exists. Mississippian mound centers may be very compact (e.g., the Wickliffe site in western Kentucky) or very spread out (e.g., Cahokia). Local factors such as topography or distribution of natural resources might account for some of the variability. However, centrally located sites are frequently more compact than sites in peripheral locations, suggesting some regional variability. Site size and the presence or absence of fortifications appear to have no effect.

Complete data on fortifications do not currently exist, however. More complete data might reveal a connection with the presence or absence of fortifications, a connection suggested by the fact that central sites (which are generally more compact) are more likely to be fortified than are peripheral sites (which are typically more spread out). The subject of fortifications is considered in more detail later in this chapter.

Orientation

Previous Research

Attempts to discern a meaningful orientation in Mississippian mound sites have led to several potentially contradictory conclusions: (1) orientation to environmental features; (2) orientation to cardinal directions; and (3) orientation to celestial events (astronomical alignments).

Orientation to environmental features. In 1973, Nelson Reed published the results of a survey of axis of orientation in 131 Mississippian mounds. He concluded (Reed 1973:35) that

> there was no meaningful cluster or orientation. Upon examination, it became obvious that their layout was a result of the mound's relationship to the plaza and the surrounding environment.

In this regard, he noted that, of 54 sites with sufficient information, 45 (83.3 %) were aligned with a river or ridgetop.

Architect William N. Morgan reached a conclusion similar to Reed's in 1980. Regarding precolumbian Southeastern architecture in general, Morgan (1980:xxvii) found that

> site orientation often is related to dominant topographical features and sometimes to the points of the compass. Occasionally one or more of the elements within a composition may be oriented with respect to the

> cardinal points, but more frequently in this study site axes seem to be related to natural terrain.

Orientation to cardinal points. In a book entitled, *The Sacred Geography of the American Mound Builders*, Maureen Korp (1990:50) used Morgan's stylized plans of Mississippian sites to come to a different conclusion.

> Yes [she says] there is often a river view (or slough, or ridge). But no, it is not the most important factor determining the siting decision. Something else is taken into account--an easterly direction. Almost always it is the more important factor.

Archaeologists have also noted an apparent Mississippian predilection for the cardinal directions. Lawrence Conrad (1991:145), for example, saw a "strong preference for orienting burials to cardinal directions" at Mississippian sites in the central Illinois River valley. Gerald Smith (1990:153, 164), in a summary of settlement in the Central Mississippi Valley, described platform mounds and houses as sometimes having corners or sides facing the cardinal directions. In a compendium of data on late precolumbian structural patterns in the Lower Mississippi Valley, Ian Brown (1985:261) noted that several buildings at the Lake George site are oriented to the cardinal directions. And Philip Phillips and his colleagues found that at mound centers of what they called the "St. Francis type" in the Lower Mississippi Valley, "the orientation of the straight sides of nearly all of these sites was very close to east-west and north-south" (Phillips et al. 1951:330).

Orientation to celestial events. Fairly strong evidence exists for celestial observation by Mississippians as demonstrated by the construction of such features as the woodhenges at Cahokia (Wittry 1973; Smith 1992). These woodhenges consist of circles of precisely placed posts which, when viewed from the center of the circle, define alignments to celestial events such as solstitial and equinoctial sunrises.

Building on this information, some researchers have searched for celestial alignments within Mississippian mound centers. At the Toqua site on the Little Tennessee River, Richard Polhemus (1990:134-135) discerned several alignments (including site axis) to the winter solstice (sunrise, presumably; it is not stated explicitly).

Clay Sherrod and Martha Rolingson (1987:9, 129-130) examined 33 Mississippian sites in the Central and Lower Mississippi Valley using platform mounds as sighting points. They found that 25 sites (75.8%) had solstitial, equinoctial, and/or stellar alignments while only 8 sites (24.2%) showed no celestial alignments. Sherrod and Rolingson emphasize the need for on-site investigations to confirm their findings which resulted primarily from examination of site plans.

Ann Daniel-Hartung (1981), working from on-site measurements made at five major Mississippian sites, found less clear evidence of celestial alignments. She concluded that "astronomical knowledge on a very limited scale was found at each of these sites in varying degrees," (1981:110) and noted (1981:105):

> What became apparent in the analysis is a concern for the cardinal directions, reflected in site orientation and individual mound orientations; other alignments are questionable due to modifications of the mounds.

Documentary evidence. Given the variety of conclusions reached by researchers examining the architectural and archaeological data, it is helpful to see what information in historic accounts yields about orientation of Southeastern towns, keeping in mind the difficulty of extrapolating backward in time from colonial period data. A review of documentary comments on 24 Southeastern towns or town groups compiled by John R. Swanton (1979:629-641) reveals that 13 were oriented to a topographic feature (11 of these to a river). No towns are described as having a

directional or astronomical orientation. Of course, no mention does not mean that such an orientation did not exist. And indeed, Swanton, in another publication (1911:174), cites a passage highly suggestive of an orientation to celestial events for Natchez mounds.

> The sun is the principal object of veneration to these people; . . . . To enable [the chief and the sun] better to converse together they raise a mound of artificial soil on which they build his cabin . . . . The door fronts east, and every morning the great chief honors by his presence the rising of his elder brother [the sun], and salutes him with many howlings as soon as he appears above the horizon. Then he gives orders that they shall light his calumet; he makes him an offering of the first three puffs which he draws; afterwards raising his hand above his head and turning from the east to the west, he shows him the direction which he must take in his course.

With these mixed results, let us turn to archaeological data on orientation.

Mound Precinct Orientation

Directional preferences. Information on mound precinct orientation was available for 96 sites. In more than half the sites (52.1%), the long axis of the mound precinct was oriented to the cardinal directions, either north-south or east-west. This preference shows clearly in Table 4-4. A one-sample chi-square test (Shennan 1988:67-69) indicates that there is less than 1 chance in 200 that this distribution would occur by chance. In other words, some orientations (notably north-south and east-west) are preferred over others.

It is worth noting, however, that nearly half the sites in the sample are *not* oriented to cardinal directions. This presents a puzzle. If directional orientation was important (as indicated by the orientation of a high proportion of sites), why are almost half the sites not so oriented? Perhaps another, more practical, factor is at work.

Table 4-4. Directions of Long Axes of Mound Precincts.

Long Axis of Mound Precinct	Number of Sites	Percent of Sites
North to South	22	22.9
East to West	28	29.2
Northwest to Southeast	7	7.3
Northeast to Southwest	11	11.5
North-Northwest to South-Southeast	7	7.3
North-Northeast to South-Southwest	6	6.3
West-Northwest to East-Southeast	8	8.3
East-Northeast to West-Southwest	7	7.3

As noted in Chapter 2, practical factors in site orientation include prevailing winds and topographic features (e.g., a road or river). Other possibilities include taking advantage of morning light (or avoiding strong afternoon light) and facing a pleasant view. For Mississippian capitals, protection from prevailing winds could have resulted in cardinal point orientation because mid-latitude winds generally blow from the west (Oliver and Hidore 1984:122). Access to morning light or protection from late afternoon sun might also result in a cardinal direction orientation. In the absence of documentary information, however, these possibilities cannot be tested.

It is possible, though, to consider the influence of topographic features, in this case water bodies, on the orientation of mound centers. Of the 96 sites, 77 (80.2%) are known to have been located near a water body (usually a river). For the rest of the sites insufficient data exist; some of these sites may also have stood near water.

The influence of water bodies. The influence of water bodies (83.1% of them rivers) can be seen in the number of sites aligned to them. (Sites which have the long axis of the mound precinct parallel or perpendicular to the water body are considered

to be aligned.) For the 96 sites in the sample, 61.5% are aligned with the nearby water body, 18.8% show no relation, and 19.8% have insufficient data to determine alignment. Moreover, water bodies exert just as strong an influence on sites oriented to cardinal directions as on those not so oriented (see Table 4-5). These configurations suggest that water bodies played an important part in the orientation of mound centers.

Table 4-5. Alignment of Mound Centers to Nearby Water bodies.

Site Orientation	Aligned to Water body		Not Aligned	Insuf-ficient Data
	Parallel	Perpen-dicular		
To cardinal directions	46.0%	14.0%	14.0%	26.0%
Not to cardinal directions	47.8%	15.2%	23.9%	13.0%
All Sites	46.9%	14.6%	18.8%	19.8%

Comments. Why, then, does an significant cardinal point preference exist? The answer lies in the physiography of the Southeast and Midwest. Of the 77 water bodies for which axis of orientation is known, the axes of 35 (45.5%) are oriented to the cardinal directions. This percentage is roughly similar to the percentage of sites oriented to cardinal directions (52.1%). It appears then that the cardinal point preference of Mississippian mound centers results from alignment to water bodies which are themselves predominantly oriented to the cardinal directions.

The possibility remains, however, that site locations were deliberately chosen so sites could be aligned both to cardinal directions and to water bodies (although this still does not explain why this occurred only half the time). If a preference for cardinal direction independent of river axis exists, it should be particularly evident in

those sites which are not aligned to a topographical feature. This is not the case. For sites not aligned to a water body (see Table 4-6), a one-sample chi-square test shows that a greater than one in four chance exists that the distribution of site orientations is random. In other words, there is a strong likelihood that no directional orientation was preferred over another.

Table 4-6. Directions of Long Axes of Mound Precincts at Sites Not Aligned to Water Bodies.

Long Axis of Mound Precinct	Number of Sites	Percent of Sites
North to South	1	5.6
East to West	6	33.3
Northwest to Southeast	1	5.6
Northeast to Southwest	2	11.1
North-Northwest to South-Southeast	3	16.7
North-Northeast to South-Southwest	1	5.6
West-Northwest to East-Southeast	2	11.1
East-Northeast to West-Southwest	2	11.1

Summary

Mississippian mound centers then seem to have been primarily oriented to a feature of topography, almost invariably a water body and then usually a river (something that will come as no surprise to Mississippianists). The apparent cardinal point orientation of mound centers appears to be a spurious correlation. The alignment of many sites to cardinal directions results primarily from alignment to water bodies which in the Mississippian world are frequently oriented to the cardinal points.

Although it seems clear that topography played a major part in siting decisions, the importance of the cardinal points in the Mississippian world view cannot be disregarded. Indeed, the very nature of the topography may have heightened the significance of those points. As historic accounts have shown (Swanton 1979:773; Hudson 1976:220, 318-319), the cardinal directions were unquestionably important to the descendants of Mississippians.

The search for celestial alignments at Mississippian mound centers has produced mixed results. On-site measurements, imperative in such analyses, are often difficult to acquire due to alterations in mounds resulting from erosion or other factors. Consequently, the subject has not yet been well-enough studied to draw regional conclusions.

The results of the chiefdom survey reported in Chapter 2 showed that chiefly capitals most often exhibited a practical orientation, one similar to other sites in the chiefdom. Topographical features were the most frequent points of alignment. The Mississippian data appear to suggest symbolic orientations for mound centers, but upon closer analysis, it becomes clear that the orientations of mound centers were highly influenced by orientations of water bodies. Mississippian capitals then primarily exhibit practical rather than symbolic orientations, a finding completely congruent with the nature of site orientation in chiefly capitals.

Chief's House

The main mound at Mississippian mound centers was identified as the site of the chief's house in Chapter 3. Before discussing the characteristics of Mississippian chiefs' houses, however, it is useful to consider in more detail how this identification was reached.

As was shown in Chapter 1, chiefs hold both power and authority. Moreover, to rule effectively, they must communicate these to their followers. Power is illustrated by activities and constructions that demonstrate the size of the chief's following. Authority is conveyed by activities and constructions that show the special nature of the chief.

The chief's house is an excellent venue for the advertisement of power and authority and often represents their greatest physical expression in the capital. As was seen in Chapter 2, chiefs' houses are usually the largest structures at capitals, because chiefs can command the labor of many people. A large chief's house thus demonstrates his *power*. Chiefs' houses also often stand in prominent locations and are more elaborated or decorated than ordinary houses. This special treatment reflects the high *authority* of the chief.

The chief's house at Mississippian mound centers, then, is likely to be the most "expensive" structure in terms of labor and one standing in a prominent or special location (evidence of elaboration or decoration is unlikely to be available without detailed investigations). Platform mounds, which generally serve as bases for buildings, should be considered integral parts of structures. Thus the most "expensive" structure is the mound with the greatest volume (i.e., the highest labor input). The most prominent location for a house at mound centers is atop the *tallest* platform mound. In Mississippian mound centers these two features almost always coincide (the main mound is both the largest in volume and the tallest), leading to the conclusion that the main mound is the site of the chief's house.

Before leaving this topic, the possibility must be considered that the main mound is the site of a religious structure rather than the chief's house. There are

several reasons to argue against this likelihood. First, as noted in Chapter 2, chiefs' houses are usually the largest structures at a capital while religious structures vary in size and are rarely larger than the chief's house. The chief's house expresses power first and authority second while a religious structure reflects the reverse (authority first and power second, if at all). Thus a religious structure is unlikely to have been placed on the largest mound (a representation of power).

Second, since it was argued in Chapter 2 that prominent location expresses authority, it might seem that religious structures should stand on the tallest mound (height being one form of prominence). Recall, however, that religion is only one source of authority. Prominent location, in fact, probably reflects an authority based on inherited social rank. It is not surprising, then, that religious structures are not necessarily prominently located in capitals, but chiefs' houses usually are. The highest elevation is most likely to be associated with the chief (who is the highest-ranking individual in the society) rather than with religious personnel (whose social rank is lower than that of the chief). This is especially true if the highest mound is also the largest one. Thus, a religious structure is unlikely to have been placed on the tallest mound.

Having identified the main mound as the site of the chief's house, it is now possible to look more closely at various aspects of size, form, construction, decoration, and location. Before turning to the archaeological evidence, a review of the documentary evidence for Mississippian chiefs' houses will be helpful.

Documentary Evidence on Mississippian Chiefs' Houses

Most observers agree that the chief's house was generally better than those of commoners. The French explorer Henri de Tonti, arriving in the village of the Taensa in the Lower Mississippi Valley in 1682 (Black 1967:504), declared he was

> . . . never so surprised as on entering the cabin of the chief, because the other savages do not build in this manner. One recognized in this nation some of the qualities which civilized people possess. They first made us enter a cabin having a front of 40 feet; the walls of mud, 2 feet thick and 12 high. The roof is made dome shaped, of cane mats, so well worked that the rain does not pierce through them at all. On entering we saw the chief seated on a couch. There were more than 60 old men opposite him . . . . There was a torch of dry canes in the middle of the cabin, which latter was ornamented with many brass bucklers hung on the four walls, with a quantity of paintings, with an alcove where the chief reposes . . . .

More than 150 years earlier, the Gentleman of Elvas, a chronicler of the de Soto expedition, made a similar, though less detailed, statement about the people of the lower Southeast (B. Smith 1968:52).

> The difference between the houses of the masters, or principal men, and those of the common people is, besides being larger than the others, they have deep balconies on the front side, with cane seats, like benches; and about are many large barbacoas, in which they bring together the tribute their people give them . . . .

Elvas's fellow chronicler, Rodrigo Ranjel (Bourne 1922:101-102), provides a specific example of a chief's house that was better. At Talimeco (in South Carolina)

> the *caney*, or house of the chief, was very large, high and broad, all decorated above and below with very fine handsome mats, arranged so skillfully that all these mats appeared to be a single one . . . .

In the following sections, historic data on specific features of chiefs' houses are discussed.

Size. The earliest chroniclers to provide size data (Ranjel and Elvas) note simply that chiefs' houses are larger than those of commoners (see passages quoted

above). Later chroniclers sometimes give dimensions of the chief's house. Most of these descriptions have been quoted at length earlier in this section or in Chapter 3, so only the dimensions are cited here. Tonti says the Taensa chief's house was 40 ft wide and 12 ft tall (Black 1967:504). In 1700, Pierre LeMoyne d'Iberville described the Natchez chief's house as 25 by 45 ft (McWilliams 1981:125); some years later Antoine Le Page Du Pratz noted that the chief's house was 30 ft square and 20 ft high (Neitzel 1965:64-65).

Location. As noted in the detailed discussion in Chapter 3, many early observers placed the chief's house on top of a mound. Garcilaso provides a general (though secondhand) description of the location of chiefs' houses in the Southeast. Although this description was quoted in Chapter 3, it is provided again here because of its relevance to this subject (Varner and Varner 1951:170-171).

> . . . [T]he Indians of Florida [i.e., the Southeast] always try to dwell on high places, and at least the houses of the lords and Caciques are so situated . . . . [T]hey build such sites with the strength of their arms, piling up very large quantities of earth and stamping on it with great force until they have formed a mound from twenty-eight to forty-two feet in height. Then on the top of these places they construct flat surfaces which are capable of holding the ten, twelve, fifteen or twenty dwellings of the lord and his family and the people of his service, who vary according to the power and grandeur of his state.

De Soto expedition chroniclers also note the placement of the chief's house on a mound in two specific areas: Tascaluça (in central Alabama) and Casqui (along the St. Francis River west of the Mississippi). When the Cacique of Tascaluça received de Soto and his expedition, the Cacique was, according to Elvas (B. Smith 1968:80-81), "at home, in a piazza. Before his dwelling, on a high place, was spread a mat for him . . . ." Ranjel (Bourne 1922:120) agrees, saying, ". . . the chief was on a kind of balcony on a mound at one side of the square . . . ."

In Casqui, as noted in Chapter 3, Elvas (B. Smith 1968:251) declared it was

> . . . the custom of the Caciques to have near their houses a high hill, made by hand, some having the houses placed thereon . . . .

At the beginning of the eighteenth century, the Natchez chief's house stood, according to several observers, on top of a mound. Iberville (McWilliams 1981:125) said, "we proceeded to his [the chief's] hut, which is erected on a 10-foot mound of dirt carried there." This was still the case some years later when Le Page du Pratz (1975:338) described the chief's house: "like the temple [it] is built upon a mount of earth, about eight feet high, and sixty feet over on the surface." Father Pierre Charlevoix (Neitzel 1965:64-65) says of the Natchez chief's house of the 1720s, "It is also larger and higher than the rest, placed on a somewhat elevated spot, and stands alone, no other building adjoining it on any side."

Form. Most observers state or imply that Southeastern chiefs' houses were square or rectangular as were Natchez and Taensa houses (Swanton 1979:418). This is so even when ordinary houses were not rectangular: in 1721 the Tunica chief lived in a square house while ordinary houses were "partly square and partly round"[3] (Swanton 1979:417). Commoners' houses are also often described as square (Le Page du Pratz 1975:359; Neitzel 1965:65).

Elaboration and decoration. Chiefs' houses apparently had some embellishments of form. Elvas and Ranjel both note porches or "balconies" attached to the fronts of buildings (B. Smith 1968:52; Bourne 1922:120), and Tonti (Black 1967:504) describes an alcove for the Taensa chief inside the house.

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[3] This picture may be somewhat distorted by the fact that the Tunica were living in a formerly Houma village at the time.

The outsides of some chiefs' houses were decorated with mats or paintings. According to Ranjel (Bourne 1922:102), the chief's house at Talimeco was "all decorated above and below with very fine handsome mats, arranged so skillfully that all these mats appeared to be a single one." Around 1700, Alonso de Leturiondo (Hann 1986:201) described a place called Aramazaca (possibly outside the Mississippian world) where

> the Indians extract very fine and light powders of all colors, which they use to make pigments, and, with them they paint their council houses and churches, their battles and histories with great naturalness.

Father Charlevoix (Black 1967:503) says the Tunica chief's house of the early eighteenth century was "finely decorated for an Indian's, on the outside; on which there are figures in relief." In the later part of the eighteenth century, William Bartram found elaborate paintings on the walls of houses in the Creek area (Bartram 1853:18 quoted in Black 1967:498).

> The paintings which I observed among the Creeks were commonly on the clay-plastered walls of their houses, particularly on the walls of the houses comprising the *Public Square* . . . they were, I think, hieroglyphics . . . . The walls were plastered very smooth with red clay; then the figures or symbols were drawn with white clay, paste, or *chalk*; and if the walls were plastered with clay of a whitish or stone color, then the figures are drawn with red, brown, or bluish chalk or paste.
>
> Almost all kinds of animals, sometimes plants, flowers, trees, etc., are the subjects . . . . (emphasis in original)

Decoration was present inside as well. In the Natchez chief's house, according to Father Le Petit (Neitzel 1965:65),

> there are . . . a number of beds on the left hand at entering; but on the right is only the bed of the great chief, ornamented with different painted figures . . . . In the middle of the cabin is seen a small stone.

Perhaps the most tantalizing information about decoration comes from Tonti, who says the inside of the Taensa chief's house was ". . . ornamented with many *brass*

bucklers hung on the four walls, with a quantity of paintings (Black 1967:504; emphasis added)." A buckler is a small shield, and it is extremely tempting, despite the seventeenth century date, to interpret these (as Glenn Black [1967:504] tentatively does) as copper plates such as those typical of precolumbian Mississippian society.

Construction materials. A moderate amount of information exists on the materials with which Southeastern houses were constructed. The following discussion is drawn largely from Swanton's (1979:421-422) compilation on the subject. The techniques of house construction were roughly similar around the Southeast, although the materials varied slightly from region to region. The favorite material for building the frame of a house was pine. Hickory, cedar, locust, and sassafras woods are also mentioned. Houses north of the present Georgia-Florida state line were often plastered with mixtures of clay and grass or clay and Spanish moss. Houses south of this area were, according to Biedma, "covered with palm leaves and with grass" (Swanton 1979:408; Bourne 1922:10). Houses that were plastered had lathings of cane or of oak or hickory branches. Cane mats were sometimes hung on the walls, both inside and outside the house. Roofing materials included grass thatch (sometimes with a cane layer underneath), pine, cypress, or cedar bark, and palmetto leaves.

In two descriptions where chiefs' and commoners' houses are described (Tonti on the Taensa [Black 1967:504] and Charlevoix on the Natchez [Neitzel 1965:64]), no distinctions in building materials are made. Both, however, imply that the chief's house was better constructed. Charlevoix says the house of "the great chief is very neatly plastered inside" (Neitzel 1965:64). Tonti (see the quotation above for the whole description) remarks that the roof is covered in "cane mats, so well worked that the rain does not pierce through them at all" (Black 1967:504).

Archaeological Data on Mississippian Chiefs' Houses

Data on buildings standing on top of main mounds at Mississippian sites are extremely limited. Excavation is necessary, and the tops of many mounds remain untouched by archaeologists, perhaps due to an emphasis over the last 20 years on research into the lives of ordinary people at Mississippian sites. The following section is therefore not a comprehensive survey intended to describe large numbers of Mississippian chief's houses. The section is largely based on the most accessible data; other published data may well exist and would supplement the information provided here.

Size. Because the size of the main mound was discussed in Chapter 3, this section is devoted to the size of structures on the main mound. Information on mound summit structures comes from excavations and thus is relatively limited; only 21 sites provide size data. The numbers below are cited for illustration rather than for quantification.

The nature of the 21 sites with information on size of the chief's house contrasts with the nature of sites providing data on other characteristics (e.g., MPA, layout). In those cases, the sites were mainly larger ones. Contrarily, more than half the sites on this list (61.9%) are Small or Very Small sites; only four sites are Medium-Large or larger. Apparently, smaller sites are more likely to have had excavations carried out in the main mound than are larger sites. The reasons for this may be logistical (i.e., a smaller mound is a more manageable excavation than a larger one) or related to differential endangerment (i.e., smaller sites may be more susceptible to destruction and thus more likely to be studied due to mitigation requirements; for example, several small sites impacted by the construction of the Norris Dam across

the Clinch River in Tennessee provide very detailed data [Webb 1938]). Whatever the reasons, the reader should keep this constraint in mind during the following discussion.

Data exist for 47 structures on main mounds at the 21 sites (see Table 4-7). Floor area was calculated for these 47 structures from published dimensions or taken from authors' estimates. Floor area ranges from 10.0 m^2 at the Small Snodgrass Island (Alabama) site to 825.9 m^2 at Cahokia; the median area was 71.9 m^2. Also worth noting are two sites not included in this list. These sites, the Very Large Angel site and the Medium-Large Lilbourn site, contained structures on secondary mounds that were larger than any main mound structure noted here except the one on Monks Mound at Cahokia. A structure on Mound F at Angel was 27.4 x 13.4 m; the floor area encompassed 367.2 m^2. Glenn Black (1967:273) interprets this structure as a religious building. At Lilbourn, a 15.2 x 18.3 m structure stood on a secondary mound and covered 278.2 m^2 (Chapman 1980:216).

A brief look at the sizes of non-mound structures at Mississippian capitals provides data with which to compare the size of main mound structures. Information on 51 non-mound houses at 17 sites was available (see Table 4-8). These 17 sites differ from the ones in the first list (although there is some overlap). Moreover, the sites in this set are distributed more evenly throughout the range of size classes. These differences may limit the comparability of the two lists to some extent, but the information is still useful. Floor area ranges from 6.7 m^2 at the Medium-Small Crosno site to 186.3 m^2 at the Medium-Large Mitchell site, while median floor area is 35.2 m^2. The median floor area of non-mound structures (35.2 m^2) is thus half that of structures on main mounds (71.9 m^2).

Table 4-7. Size of Structures on Main Mound Summits.

Site Size Class	Site	Floor Area (m^2)	
Cahokia	Cahokia	825.9	
Very Large	Lake George	160.0	
Medium-Large	Rood's Landing	57.8	24.0
	Mineral Springs	29.0	
Small	Toqua	126.9 109.3	68.5
	Hiwassee Island	173.8 128.8 120.9 71.9	64.8 61.6 40.9
	Snodgrass Island	10.5	10.0
Very Small	Coweeta Creek	144.0	
	Rudder	165.9 147.3	100.0
	Hill Farm Stone Mds	77.0	
	Garden Creek	72.3	
	Richardson	66.4	
	Irene	60.0	
	Furman	38.5	
	Bessemer	185.4 124.8 85.9 59.9	53.2 42.2 37.2
	Cemochechobee	49.0	35.0
	Lubbub	81.7 81.0	36.0 30.0
Indeterminate	Lea Farms	221.9	
	Fatherland	170.8	
	Gordon	206.0 57.4	50.0
	Ausmus	137.8 87.7	44.9

Table 4-8. Size of Non-mound Houses at Mississippian Capitals.

Site Size Class	Site	Floor Area (m^2)	
Very Large	Lake George	42.0	
	Angel	138.0	44.9
		52.6	30.3
	Moundville	22.0	
Large	Kincaid	27.9	
Medium-Large	Lilbourn	57.8	17.2
	Mitchell	186.3	47.7
		121.0	16.8
		100.0	
Medium-Small	Towosahgy	67.2	
	Crosno	34.2	16.7
		20.2	7.2
		17.6	6.7
Small	Toqua	95.2	35.2
		46.1	20.8
	Hiwassee Island	19.8	18.1
	Gunter's Landing	27.0	22.4
	Jonathan Creek	83.1	7.5
Very Small	Garden Creek	37.2	
	Bessemer	176.5	51.5
		108.3	43.9
		84.2	43.5
		81.7	29.2
		77.4	21.2
		66.0	18.5
		62.6	
	Annis Mound	36.0	
	Lubbub	35.0	30.0
		30.0	
Indeterminate	Lea Farms	20.8	17.3

Despite its limitations, this survey nevertheless suggests that structures on main mounds are considerably larger than typical Mississippian dwellings. This conclusion may also be drawn from extensive archaeological work at individual sites. Richard Polhemus (1990:131), for example, notes that, at the Small Toqua site, ". . . structures on the summit of Mound A . . . . closely resembled--in size . . .--the largest village structures near the plaza." Additional excavation programs designed to compare chiefs' and commoners' residences at individual sites would add detail to the general premise that Mississippian chiefs' houses are larger than commoners' houses.

Form. As noted at the beginning of this section, the chief's house comprises both the building itself and the platform it stands on. The platform mound is an integral part of the chief's house. So, when describing form, both building form and mound form must be considered.

The mound form most associated with Mississippian sites is the truncated pyramid, but other mound forms occur too, including several variations of the truncated pyramid (see Table 4-9). Some care must be exercised when identifying mound form because erosion often blurs a mound's original outlines. Thus a mound built as a truncated pyramid may now appear conical. Notwithstanding this difficulty, information on mound form was available from 103 sites; 101 of these yielded data on main mound shape. In the following descriptions of Mississippian mounds, mound shapes are described strictly in formal terms. Functional descriptions are avoided, although where a particular form seems to be associated with a particular function, this has been noted.

Table 4-9. Mound Forms at Mississippian Capitals.

Mound Form	Description	Examples
Truncated pyramid, type 1 (TP1)	square or rectangular truncated pyramid with a length-to-width ratio of less than 2:1	Mound 2 at Lake Jackson Mound A at Lake George
Truncated pyramid, type 2 (TP2)	square or rectangular truncated pyramid with a length-to-width ratio of 2:1 or more	Mound B at Jordan Mound A at Manny
Truncated pyramid, type 3 (TP3)	rectangular truncated pyramid with a long, narrow summit	Powell Mound Mound 72 at Cahokia
Multi-level truncated pyramid (MLTP)	truncated pyramid with two or more terraces or aprons	Mound A at Etowah
Multiple truncated pyramid (MTP)	two or more truncated pyramids that are conjoined or connected by embankments	Mound C at Fitzhugh
Simple cone (SC)	hemispherical mound with rounded top	Kincaid Burial Mound
Truncated cone (TC)	cone with a flat summit	Mound A at Menard (?)
Multiple cone (MC)	conjoined simple or truncated cones	Craig Mound at Spiro
Composite, type 1 (C1)	truncated pyramid with a cone on top or at the side	Mound 8 at Mineral Springs
Composite, type 2 (C2)	multi-level truncated pyramid with a cone on top or at the side	Monks Mound at Cahokia Mound A at Angel Mound 10 at Kincaid
Other (O)	idiosyncratic shape	Bussell Island mound

The most common mound form is the truncated pyramid, type 1 (TP1). A TP1 is a square or rectangular truncated pyramid with a length-to-width ratio of less than 2:1. The summit is invariably large enough to hold at least one building (although

not all did hold structures; according to Brown et al. [1978:186], Arkansas Valley Caddoan sites did not). This mound form occurs at 91 of the 103 sites and probably, if erosion had not obscured identification, at many more. It may be safe to say that a TP1 occurs at most Mississippian mound centers. The TP1 shape is also the most common main mound form, occurring at 80 of 101 sites with information.

The truncated pyramid, type 2 (TP2) is similar to TP1 except that it has a length-to-width ratio of 2:1 or more. Again, the summit is large enough to hold one or more buildings. The TP2 form is found at 8 of 103 sites. At only two sites does the TP2 form occur as the main mound. This shape may simply be a variant of TP1; it is unclear whether the distinction is significant.

The truncated pyramid, type 3 (TP3) is rectangular with a long, narrow summit. This form is called a ridge-top mound by archaeologists working in the American Bottom (Fowler 1973:15). All examples identified here occur at the Cahokia site (Mounds 66 and 72) or at the Powell site (which some archaeologists consider part of Cahokia). The main mound at Powell (destroyed in 1931) was a TP3, but at an earlier stage it was a TP1 (Ahler and DePuydt 1987:3, 8). Melvin Fowler (1973:19) has suggested that ridge-top mounds served as monuments to mark important locations in the Cahokia vicinity.

The multi-level truncated pyramid (MLTP) includes truncated pyramids which have two or more terraces or aprons. The MLTP form occurs at 16 of 103 sites. At 11 sites the main mound is a multi-level truncated pyramid.

The multiple truncated pyramid (MTP) consists of truncated pyramids that are conjoined or are connected by an embankment. The MTP form rarely occurs; only three sites contain this form, and only two occur as main mounds.

As noted earlier, Mississippian mound centers also contain forms other than pyramids. The simple cone (SC) is a hemispherical mound with a rounded top. Some problems exist in accurately identifying SC forms because erosion sometimes converts other mound types into this one. However, the SC form does seem to occur at Mississippian mound centers, possibly functioning as a burial mound. Simple cones are identified at 9 of 103 sites. This form does not occur as a main mound.

The truncated cone (TC) is a cone with flat summit. The same identification constraints apply to this form as to the SC form. Nonetheless, the TC form has been identified at five sites. One main mound--at the Menard site--may be a truncated cone (Phillips et al. 1951:266).

The multiple cone (MC) consists of conjoined simple or truncated cones. This form is rare, occurring at only three sites, all Arkansas Valley Caddoan sites. The most famous MC is the Craig Mound at Spiro which served primarily as a burial mound (Brown 1984:243). The only others identified here stand at the Harlan and Norman sites in eastern Oklahoma (Bell 1984:229; Brown et al. 1978:187). This form does not occur as a main mound.

At least two composite mound forms can be found at Mississippian sites. Composite, type 1 (C1) is a truncated pyramid with a cone on top or attached to the side. The C1 form occurs at only 2 of 103 sites. Only one occurrence as main mound was found--Mound 8 at the Mineral Springs site (Bohannon 1973:2).

Composite, type 2 (C2), perhaps the most complex mound form, is a multi-level truncated pyramid with a cone on top or attached to the side. The single most famous Mississippian mound, Monks Mound at Cahokia, is a C2 (or was until the cone on the third terrace was torn down in 1831 [Reed 1973:31]). In addition to

Cahokia, the C2 form occurs at the Angel (Very Large) and Kincaid (Large) sites; all three sites are major Mississippian mound centers. The C2 form appears as the main mound at Cahokia and Angel.

An "other" category (O) was established for mounds that did not fit into any of the preceding categories. Three sites contained mounds classed as other. Only one of these occurred as the main mound--a truncated cone with a diamond-shaped apron at the Bussell Island site on the Tennessee River (Thomas 1985:398-399). Also, although the mound at Hiwassee Island was classed as a TP1 based on its final shape, earlier stages contained conjoined truncated mounds with several levels (Lewis and Kneberg 1970:57-59).

Main mounds (presumed to be elements of chiefs' houses) can be grouped into three general categories: (1) simple truncated forms (TP1, TP2, TP3, TC); (2) more complex multi-level forms (MLTP, C1, C2); and (3) miscellaneous forms (MTP and O). Main mound forms were identifiable at 101 sites (at 2 sites with mound form data the main mound form was indeterminate).

Simple forms are most common (84 of 101). Sites with simple truncated main mounds contain from 1 to 30 mounds, with a median of 4 mounds. Main mound volume index (VI) for these sites ranges from 1.2 to 208.5, with a median of 13.3. The medians for both these size characteristics are higher for this group of sites than the medians for all sites (2 mounds and VI of 5.6). This probably results from the fact noted in earlier sections that information on mound sites is more accessible for larger sites than for smaller ones (at least when acquiring the information does not rely on excavation). The height of the main mound (a characteristic shown in Chapter 3 to be only partially reflective of site size) is also larger for this group of sites (range of 1.6 to

16.8 m compared to 0.5 to 30.0 m for all sites; median of 6.0 m compared to 4.0 m for all sites).

Multi-level main mounds occur at 14 of 101 sites. These sites are evenly distributed across the Mississippian world; no regional preference was noted. They contain from 1 to 100 mounds, with a median of 6.5 mounds, higher than the median of 2 for all sites or 4 for sites with simple truncated main mounds. The main mound VI for this group of sites ranges from 3.3 to 2291.1, with a median of 51.8, far higher than the medians for all sites (5.6) or for those with simple truncated main mounds (13.3). These figures all suggest that the more complex mound forms occur at larger sites. Moreover, the median height of the main mound is also higher for this group--9.9 m compared to 4.0 m for all sites and 6.0 m for the group with simple truncated main mounds.

Archaeological excavation is a prerequisite for the description of the shape of buildings at Mississippian capitals. Fortunately, considerable work has been carried out at mound sites (in non-mound contexts) and has been drawn on here. Data on house form were collected from 41 mound centers.

Of the 41 sites with information, rectangular structures occur at 39, while circular structures appear at 10 sites. Only 2 of the sites with circular structures do not also have rectangular buildings. These figures indicate an obvious preference for rectangular houses but not an exclusive one. This pattern is also seen at sites other than capitals. At farmsteads, hamlets, and villages, houses are typically rectangular (e.g., Dickens 1978:119-121; Green and Munson 1978:313-314; Price 1978:218-219; Muller 1986:191), but circular houses appear in some areas (e.g., southeast Arkansas [Rolingson 1976:114] and northwest Florida [Tesar 1980:779-781; Scarry 1984]).

Data on buildings sited on the main mound come from 30 sites. Rectangular structures are found on one or more levels of all 30 main mounds, while circular structures also occur at two sites (Hiwassee Island and Snodgrass Island). The preference for rectangular buildings thus appears more pronounced for main mound structures than for non-mound buildings.

The ethnographic data presented in Chapter 2 suggest that the form of a chief's house is generally similar to that of ordinary houses. This is probably because form reflects one aspect of authority--tradition[4]. It is only when a chiefdom comes under the influence of a foreign power (perhaps in the form of colonial dominion) that the local tradition may be overridden in favor of the tradition of the new ruling group. In these situations, the chief's house may take on a shape typical of the foreign power (because the chief adopts the authority symbols of the rulers) while ordinary houses retain local traditional forms. In the absence of foreign domination, the form of the chief's house should be similar to that of ordinary houses. This appears to be the case in the Mississippian world.

Considerable similarities in mound form occur across the Mississippian world, though some variation does exist. The lack of geographic preferences in form suggests that the differences are not indicative of regional styles. The variation does, however, seem related to size of sites. More complex mound forms (i.e., multi-level mounds) occur at larger sites. Because mound form probably reflects authority rather than power, an association of complex forms with larger sites would not necessarily be expected. However, power is an element of authority (which is defined as

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[4] The traditional shapes of houses may, in turn, be influenced by environmental or social considerations.

legitimate power), so sites with increased authority might be expected to show increased power (larger size) as well.

Building form is even more homogeneous than mound form. Ordinary structures are mainly rectangular, although circular houses occur in some regions. Almost all structures standing on main mounds are rectangular. No clear distinction in building form exists between chiefs' houses and ordinary ones (though chiefs' houses may be more elaborate [see below]). These results are thoroughly expectable, particularly for the precolumbian period when no evidence of foreign domination exists.

Location. Conventional wisdom holds that the main mound stands at the edge of the site rather than in the center. This is related to the view that Mississippian mounds generally surround a plaza which occupies the central position. This view was seen to be generally accurate (see Layout section above), but many Mississippian sites show considerable complexity in their arrangements. It is useful then to look specifically at the position of the main mound.

To do this, 103 mound centers (with two or more mounds) were examined. The main mound was classed as central or peripheral. Because it is unwise, in the absence of archaeological investigations, to assume that architectural spaces represent plazas, the location of the mound is described here within the context of the mound group as a whole. A centrally located mound thus has other mounds surrounding it; the mound may not stand in the exact center of the site. A peripheral mound, however, clearly stands at one edge of the mound group.

Peripheral main mounds occurred at 76 sites (73.8%), central mounds at 27 sites (26.2%), thus bearing out the traditional view of the position of the main mound.

However, the fact that more than one-quarter of the sites contained mounds in central locations bears further investigation. Two hypotheses are examined below: (1) sites with the main mound in a central position are typical of particular regions and (2) sites with central main mounds are larger than those with peripheral main mounds.

As can be seen in Figure 4-2, sites with central main mounds appear evenly distributed across the Mississippian world. Although a few clusters appear to exist in parts of the Mississippi River valley, these areas contain high population densities in general. Sites with peripheral main mounds show a distribution similar to that for central main mounds, suggesting that regional variability does not occur.

The median number of mounds per site for sites with central main mounds is eight. For sites with peripheral main mounds, the median number of mounds is four. These figures suggest that sites with central main mounds are larger than those with peripheral main mounds. Sites with central main mounds are also generally larger when categorized by the size classes defined in Chapter 3 (see Figure 4-3).

Nelson Reed, in his 1973 survey of Mississippian mounds, noted that principal mounds were frequently placed to the west of their plazas (77.9% of his sample of 131 lay in a generally westerly direction; 28.2% of the sample lay due west). Other researchers have repeated this assertion (e.g., Phillips et al. [1951:316, 330] for sites in the Lower Mississippi Valley; Price and Price [1990:160] for sites in southeast Missouri). Usually these statements position the main mound in relation to the plaza. In some cases, it is unclear whether plazas have been defined through archaeological investigation or merely on the basis of the configuration of mounds and the resulting architectural spaces. As noted above, in this dissertation mound position is described within the context of the whole mound group. This avoids relying on possibly

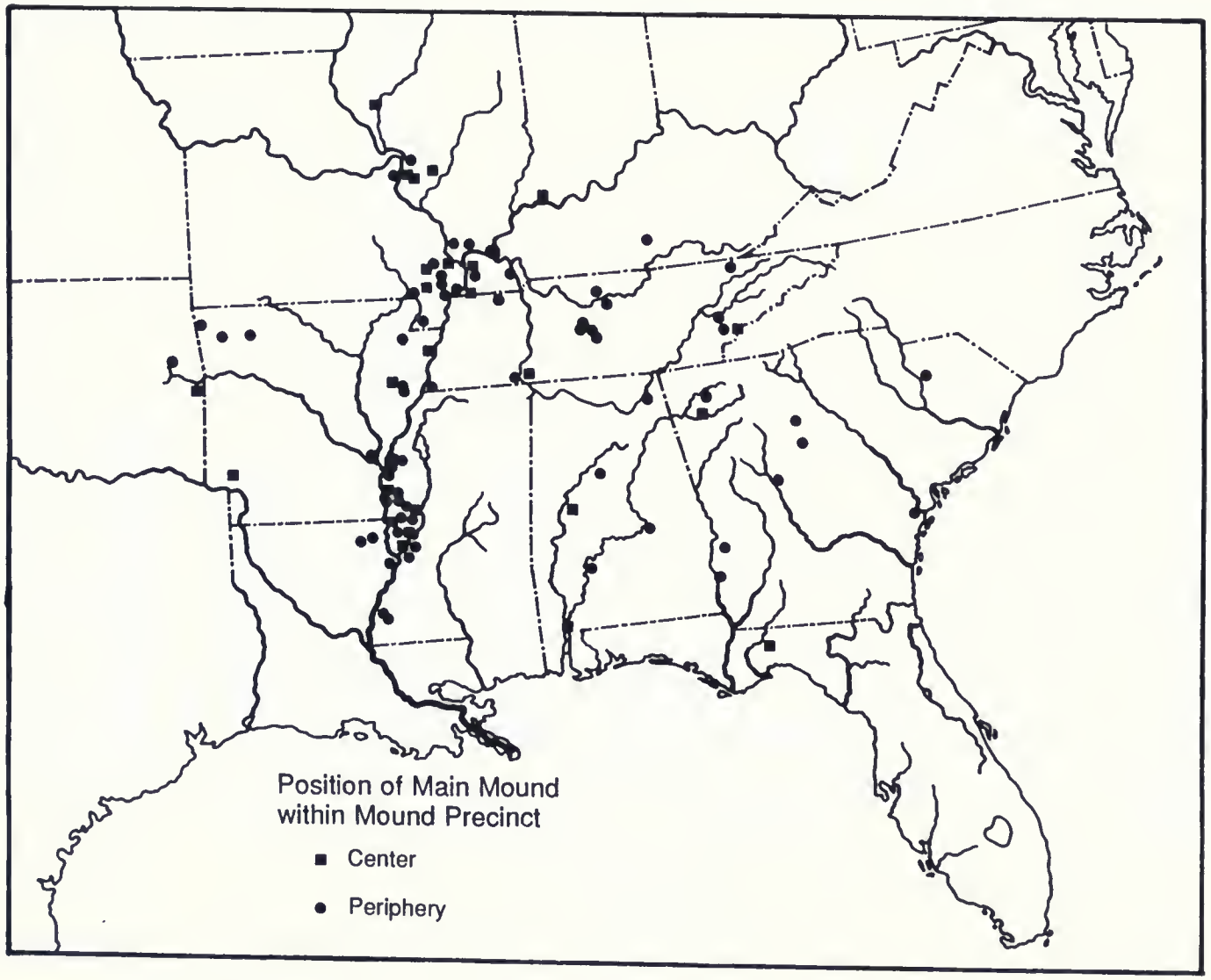

Figure 4-2. Position of Main Mound within Mound Precinct.

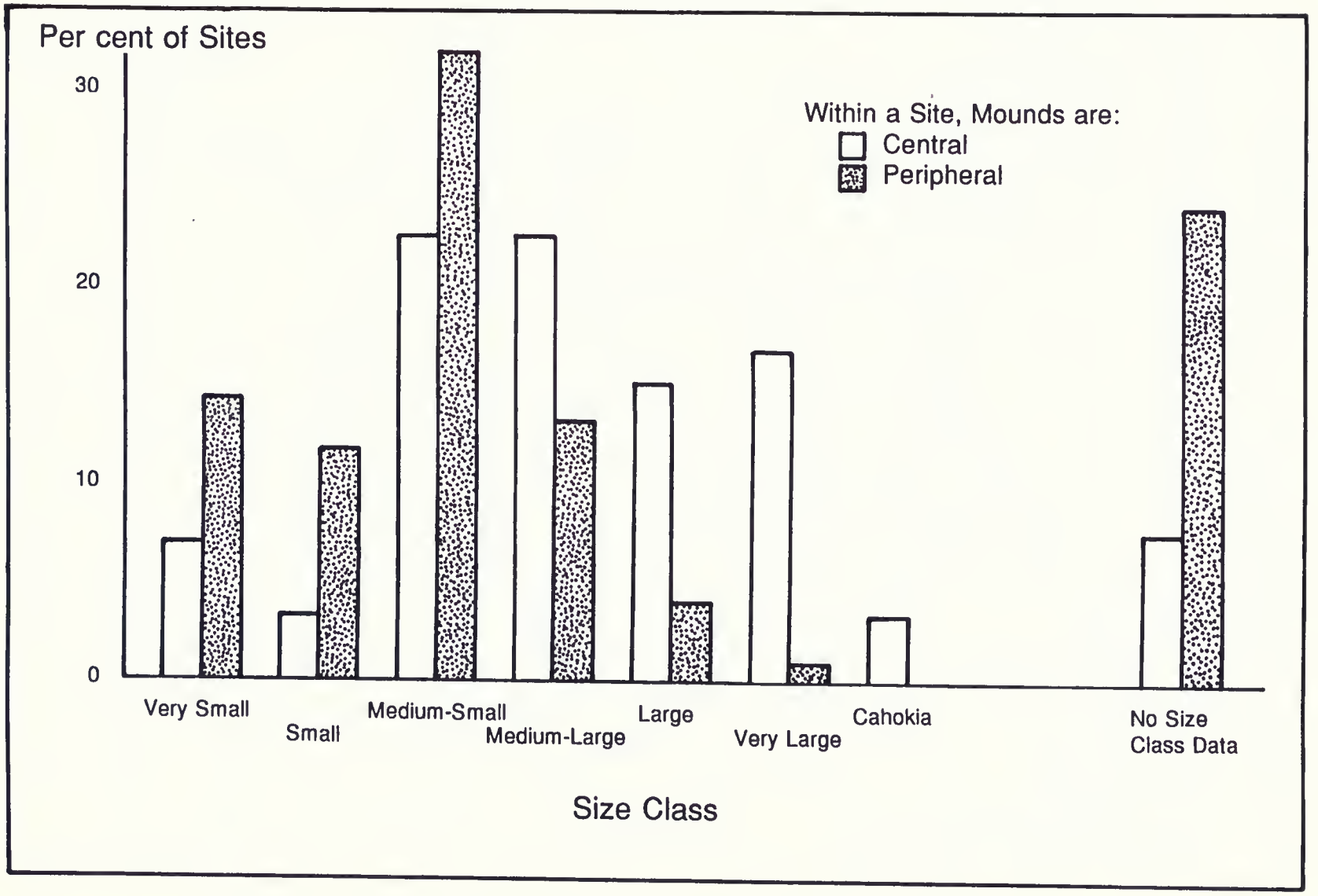

Figure 4-3. Position of Main Mound within Mound Precinct by Size Classes.

misleading information derived from architectural spaces which may or may not have defined plazas.

Table 4-10 lists the numbers and percentages for eight directional positions for main mounds within the mound precinct for the 76 sites with the main mound at the periphery. A one-sample chi-square test (Shennan 1988:67-69) applied to this distribution indicates that there is less than 1 chance in 200 that mound placement is random. In other words, some locations (e.g., north and west) were preferred over others.

As earlier researchers had noted, a preference exists for mounds placed on the west side of the mound precinct. But interestingly, a higher incidence exists for mounds located on the *north* side, a fact rarely mentioned in the literature. Nearly three-quarters of the mounds (55 sites or 72.4%) stand at one of the cardinal directions in relation to the mound precinct. Locations at intermediary directions vary somewhat, with a decided avoidance of the southeast side of the mound precinct. In general, mounds with a northerly location (north, northwest, northeast) occur most frequently, followed by those with a westerly position (west, northwest, southwest). Mounds sited to the east (east, northeast, southeast) occur somewhat less often. Southerly positions (south, southwest, southeast) occur least frequently, being preferred less than half as often as northerly positions.

The question remains whether the preferences for the cardinal directions noted above for the placement of main mounds reflect deliberate directional positioning of mounds or the influence of another factor. Recall that mound precinct orientation was shown to be heavily influenced by the presence of nearby water bodies. To examine this issue, the location of the main mound in reference to nearby water was

recorded for 59 sites (not all 76 sites had data regarding nearby water). Mounds were recorded as proximal (no other mounds are closer), medial (some mounds are closer, some are farther away), or distal (no other mounds are farther away) in relation to the water body. Proximal mounds occurred at 33 sites (55.9%), while medial and distal mounds occurred at 13 sites each (22.0%). A one-sample chi-square test (Shennan 1988:67-69) run on this distribution indicates that the likelihood that it is random is less than 1 chance in 200. The high proportion of main mounds near water coupled with the low percentage away from water suggests that nearby water bodies exerted a strong positive influence on the siting of the main mound.

Table 4-10. Directional Positions of Peripheral Main Mounds (in order of frequency).

Location	Number of Sites	Percentage of Sites
North	19	25.0
West	18	23.7
East	9	11.8
South	9	11.8
Northeast	9	11.8
Northwest	6	7.9
Southwest	5	6.6
Southeast	1	1.3

In summary, at most sites the main mound stands at the site's edge, but at a significant proportion, the main mound stands in the center of the site. This is not a regional variation. The major difference appears to be size or number of mounds. Larger sites are more likely to have centrally located main mounds. This suggests that central location is a feature of mounds being added to an existing plan. At sites

where the main mound stands in a peripheral location, a preference exists for locations close to water bodies or at the north or west sides of the mound precinct. Southeastern positions and locations away from water bodies seem to be avoided or, at least, regarded as less desirable for main mound placement.

Elaboration and decoration. Available information on the subject of elaboration and decoration is very sketchy; evidence of decoration, especially, does not survive very well in the archaeological record. Only seven sites yielded any information.

At several sites (Toqua, Hiwassee Island, Fatherland), porches were attached to houses on mounds (Polhemus 1990:131; Lewis and Kneberg 1970:56; Neitzel 1965:27-36). A porch was also part of a premound building at Lubbub Creek (Blitz 1993:78-79). Apart from the Lubbub Creek example, no non-mound buildings were found that had porches.

Most Mississippian buildings consisted of one room, but a few contained more. Mound-top structures at Rood's Landing, Hiwassee Island, and Toqua had interior partitions (Caldwell 1955:28; Lewis and Kneberg 1970:67-68; Polhemus 1990:131). In addition, some non-mound buildings had more than one room (Blitz 1993:79-81), including a structure at Hiwassee Island that was divided into three rooms (Lewis and Kneberg 1970:68, Plate 10).

Evidence for interior furnishing exists at some sites. At Hiwassee Island, for example, Lewis and Kneberg (1970:56) interpreted a clay platform found in a mound-top building as a "seat." Polhemus (1990:131) found similar features at Toqua; he described them as clay "benches" and "beds."

A few pieces of painted plaster give tantalizing hints (supported by documentary accounts) that at least some Mississippian houses were painted with designs in several colors. A painted plaster fragment from the portico of a building on Mound A at Toqua bore a design of white lines and dots on a red background (Polhemus 1985:26-27). At the Angel site, excavators found painted wall fragments in the eastern village area near the palisade (Black 1967:126); one is illustrated in Figure 82 of *Angel Site: An Archaeological, Historical, and Ethnological Study.* Designs were indeterminate due to the small sizes of the pieces. Colors found on the painted fragments at Angel included red, blue-gray, and black (Black 1967:498).

Obviously, this tiny bit of evidence gives no indication whether painted houses were the prerogative of nobles; the non-mound finds at Angel indicate, however, that wall paintings were not restricted to the highest noble, the chief. Given the archaeological evidence of painting from the Angel and Toqua sites and later documentary evidence from the Creek and Tunica areas, it may be that the painting of houses with designs or mythological symbols was more common than is now recognized.

The exteriors of some houses, however, may have been not painted but hung with cane mats. Stephen Williams and Jeffrey Brain (1983:58) note that a house on Mound A at Lake George apparently had cane mats hung on exterior walls. Polhemus (1985:26) also describes cane mats at Toqua. At Angel, impressions on plaster revealed the presence of cane mats at houses in an area near the palisade (the same area where painted wall fragments were found) (Black 1967:126).

Too few data presently exist to draw much of a conclusion regarding the elaboration or decoration of chiefs' houses. Houses with porticos do seem to occur

only on mounds, but more data could reveal otherwise. Buildings with painted walls or walls hung with cane mats are found in mound and non-mound situations. Multi-room houses also occur in both locales. The historic data on Mississippian capitals and the ethnographic data on chiefly capitals suggest that porticos and decorated walls may be more typical of nobles' houses than of ordinary ones, but more research on this subject is needed before firm statements can be made.

Construction materials. Archaeological data regarding construction materials come from 13 sites. Information from many more sites probably exists and could be acquired with a more intensive search. The following discussion deals with all types of Mississippian houses.

Five sites (Angel, Rood's Landing, Toqua, Lubbub Creek, and Bussell Island) yielded data on the materials of the frames of houses (Black 1967:575; Caldwell 1955:28; Polhemus 1985:26; Blitz 1993:136). Pine and oak are the woods most frequently mentioned. Pine occurs at all sites but Angel, where hickory dominates. Other woods include locust, cedar, and walnut.

Plaster was found at all 13 sites. At Kincaid (Cole et al. 1951:46) and Hiwassee Island (Lewis and Kneberg 1970:48), the plaster is described as being made of clay and grass, while at Angel, it was composed of clay and sedge grass or clay and cane leaves (Black 1967:495). Information on composition was not available from other sites.

According to historic accounts, the lathing or backing for plaster was frequently made of cane. Perhaps confirming this statement, cane appears often at Mississippian capitals; it is present at 10 of the 13 sites. At six of these sites, it is described as "split cane." Williams and Brain (1983:58) specifically describe the use of

split cane as lathing in a structure on Mound A at Lake George. "Smaller poles and split cane," they say, "had . . . been bound to the posts to form a wattle wall." Apart from (or perhaps in addition to) the use of cane as lathing, evidence exists for cane mats used as wall coverings at Toqua, Angel, and Lake George (Polhemus 1985:26; Black 1967:126; Williams and Brain 1983:58).

Table 4-11. Construction Materials in Mississippian Houses.

Structural Element	Ethnohistoric Evidence	Archaeological Evidence
Frame	pine (favorite) hickory cedar locust sassafras	pine hickory white oak red oak cedar black locust honey locust walnut
Plaster	north of Florida/ Georgia state line: clay and grass clay and Spanish moss south of Florida/ Georgia state line: none	clay and grass clay and sedge grass clay and cane leaves
Lathing	cane oak branches hickory branches	split cane
Roof	grass thatch (sometimes with cane layer backing) pine, cypress, or cedar bark palmetto leaves	grass thatch cane mats?
Walls	cane mats	cane mats

The composition of roofs is difficult to know from archaeological remains. However, Polhemus (1985:92) says grass thatch was part of a roof at Toqua. No other data regarding roof construction were forthcoming.

The archaeological data on construction materials tally well with historic descriptions of houses (see Table 4-11). Both archaeological and documentary data suggest that no major differences existed between materials used in chiefs' houses and those used in commoners' houses.

Mississippian Chiefs' Houses

In summary, considerable evidence exists to conclude that a Mississippian chief's house stands on the largest and (usually) the tallest platform mound at the capital. The largest mound displays the chief's power by making concrete the labor of large numbers of people. The tallest mound provides the most prominent location at a site, thus demonstrating the chief's high social rank and the authority arising out of that position.

Main mounds (seen here as integral parts of chiefs' houses) usually stand in peripheral locations within the mound group but adjacent to a public space or plaza which occupies the center of the settlement. Northern and western positions within the mound precinct occur most frequently for main mounds as do positions close to nearby waterbodies. At some sites, primarily larger ones, the main mound occupies a central location within the mound group. This probably results from the construction of additional mounds after the site of the chief's mound has been formalized.

Main mounds come in several different shapes with the truncated pyramid (TP1 and TP2) being the most common. More complex multi-level mound forms also occur, primarily at larger sites, suggesting that as a site grows larger and the chief's

(or a series of chiefs') power increases (demonstrated by the increasing site size), authority also increases (illustrated by the elaborated form of the main mound).

The buildings that stand on main mounds are larger than those in non-mound contexts. Archaeological data indicate that the median floor space for buildings on main mounds is 71.9 m^2 while the median amount of floor space in non-mound structures is 35.2 m^2. This coincides with documented statements that Mississippian chiefs' houses were larger than those of commoners. Again, the large size of the chief's house illustrates his ability to command more labor than could ordinary people.

Both archaeological and documentary data indicate that the shapes of houses that stand on main mounds are similar to those that stand in non-mound contexts; both are rectangular at most Mississippian capitals. This is expectable because the chiefdom survey in Chapter 2 showed that chiefs' houses were usually similar in form to commoners' except in instances where foreign powers exerted political influence. The similarity of building form (and of construction techniques and materials) between chiefs' and commoners' houses at precolumbian Mississippian sites suggests that foreign influence did not play a large part in the government of Mississippian polities[5].

Some slight documentary evidence exists to postulate that chiefs' houses were more elaborate and better decorated (as the chiefdom survey predicted) than were

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[5] The shift to circular "council houses" beginning in the sixteenth century may embody a transformation to a different form of political structure. Sherri Deaver (1989:249) has suggested that circular structures reflect more egalitarian social structure than do rectangular ones. Although this premise is arguable (the chiefdom survey showed that many chiefdoms and chiefs had circular houses), the obvious shift in form does imply some sort of transformation of governmental activities.

commoners' houses. Archaeological evidence, however, was too scanty to draw a conclusion one way or the other. One interesting sidelight to this research is the likelihood that many Mississippian houses (perhaps particularly those of nobles) may have been brightly decorated, with painted walls having red, white, blue, or black designs. The evidence for this, though always available (both historically and archaeologically), seems to have been ignored (or perhaps not considered important) by most researchers; it is rarely mentioned in discussions of Mississippian houses.

Chief's Storage Facilities

Mississippian subsistence relied heavily on the cultivation of crops, including goosefoot, sunflower, marsh elder, squash, beans, and, especially, corn (B.D. Smith 1985, 1986:61; Steponaitis 1986:388). Consequently, the most likely type of storage facilities would have been for agricultural produce. As was seen in Chapter 2, agricultural produce in chiefdoms is often stored in freestanding structures and occasionally within residences, particularly in the chief's house. At some Mississippian sites (e.g., outlying farmsteads or hamlets that were abandoned seasonally), underground storage pits may have been used to conceal surpluses from raiders. But at sites occupied year-round (where concealment of produce from marauders is less of a problem), above-ground granaries would have been more efficient and effective means of storing produce (DeBoer 1988:14; Ward 1985:98-99).

Mississippian Storage in the Documentary Record

Before examining the limited archaeological evidence for storage, a review of documentary data on Mississippian storage will be useful.

Early chroniclers describe storage of various kinds of agricultural produce, including corn, squash, and other plant foods (Swanton 1979:379-381; Black 1967:499). Dried fish, shellfish, and meat may also have been stored (Swanton 1979:377-378). On occasion, goods were kept inside residences, as with the seventeenth century Caddo (though they also had separate storehouses) (Swanton 1979:98, 381). But the primary means of storage was a freestanding granary, usually raised above the ground to cut down on insect and/or rodent damage to the contents (Swanton 1979:379, 380). A description of such granaries comes from Father Gravier (cited by Black 1967:499), writing about Tunica storehouses of around 1700:

> their granaries are . . . made like dovecotes, built on 4 large posts, 15 or 16 feet high, well put together and well polished, so that the mice can not climb up, and in this way they protect their corn and squashes.

Earlier in the contact period, the Gentleman of Elvas paints a nearly identical picture (B. Smith 1968:52).

> Maize is kept in a barbacoa, which is a house with wooden sides, like a room, raised aloft on four posts, and has a floor of cane.

Granaries seem to have been located near owners' houses. Gravier, for example, describes Tunica granaries as being "near their cabins" (Black 1967:499). Elvas also implies that storehouses are part of ordinary household compounds (B. Smith 1968:52) and specifically states that chiefs' granaries stood near chiefs' houses (see below).

No direct data exist on the size of granaries in relation to that of houses (remember that storehouses are larger than residences in some chiefdoms and smaller in others). Elvas does imply, however, that granaries were smaller than houses; the storehouse, he says, is *like a room* (see above). In contrast, the size of the chief's

storage in relation to ordinary storage is clearly stated, again by Elvas (B. Smith 1968:52):

> The difference between the houses of the masters, or principal men, and those of the common people is, besides being larger than the others, they have deep balconies on the front side, with cane seats, like benches; and *about are many large barbacoas*, in which they bring together the tribute their people give them of maize, skins of deer, and blankets of the country. (emphasis added)

This statement also indicates the location of the chief's granary (near the chief's house) and the kinds of things stored there (non-food tribute items as well as agricultural produce).

Swanton (1979:378) suggests that religious structures may also have served as storehouses for tribute items and cites the temple atop a mound at Talimeco as an example. According to Ranjel (Bourne 1922:101), the members of de Soto's expedition found breastplates, headdresses, and shields at the temple. It is not clear from the accounts, however, if these items were specifically stored in the religious structure or placed there for other reasons. The pearls and other exotic items that de Soto found in a nearby temple, for example, were there because they accompanied burials, not because they were stored there (Bourne 1922:100).

Archaeological Evidence for Storage at Mississippian Sites

Archaeologists have recognized several types of storage at Mississippian sites: (1) storage pits; (2) storage in houses; and (3) presumed storehouses or granaries.

Storage pits. The role of storage pits as a marker of sedentary life has recently been reevaluated by Warren DeBoer (1988) who showed storage pits to be associated with a semi-sedentary rather than a sedentary way of life (see also Ward 1985:98-100). As noted earlier in this section, storage pits are useful when the need for concealment

of stores exists (such as during periodic abandonment of a site) but inefficient if there is no need for concealment (as in a site occupied year-round). Not surprisingly, then, DeBoer (1988:9) found storage pits to be rare or absent at such Mississippian capitals as Cahokia, Angel, Kincaid, Hiwassee Island, and Jonathan Creek, sites presumed to have been occupied year-round. However, storage pits sometimes occur at Mississippian farmsteads or hamlets (Scarry 1984:8), perhaps suggesting seasonal movement. Data from the Moundville area support DeBoer's conclusions regarding storage pits and sedentism. At the Late Woodland-Mississippian transition when corn cultivation is increasing, the incidence of storage pits decreases (Mistovich 1988:23; Blitz 1993:100), leading Tim Mistovich to postulate an increase in above-ground storage.

Storage in houses. The second type of storage known from Mississippian sites is storage within residences. Polhemus (1990:127) found that the corners of houses at the Toqua site on the Little Tennessee River were used for both food and non-food storage. Jon Muller (1986:192-193) has suggested, partially based on the general lack of any evidence for separate storage structures, that storage occurred in houses in the Lower Ohio Valley.

Raised granaries. Above-ground storehouses or granaries, though perhaps the predominant mode of Mississippian storage, are notoriously difficult to recognize in the archaeological record (Blitz 1993:100). If the historic accounts can be accepted as accurate, the reasons for this difficulty become clear. Because only four posts were needed in construction, the posthole pattern may be undiscernible in the presence of large numbers of postholes as may be the case when several overlapping structures occur. The presumed small size of granaries also may cause them to get lost in

background clutter when many features are present. Moreover, a raised floor leaves no in-ground staining or compaction to help define the extent of the structure.

Notwithstanding these difficulties, several archaeologists have identified granaries in the archaeological record. At the Lubbub Creek site, John Blitz (1993:100) found several possible granaries, tentatively identified on the basis of associated daub, presence of charred corn kernels, and absence of floor staining. These structures stood near presumed residences. At the Toqua site, Richard Polhemus (1990:127) interpreted patterns of large postholes, surface-fired areas, presence of corncobs with kernels, and burials below as storage and/or food processing structures. Polhemus postulates that the surface-fired areas resulted from food preparation fires; the association of burials with food preparation or storage structures is unclear. As at Lubbub Creek, these ancillary structures stood near the entrances to residences. Thomas Lewis and Madeline Kneberg (1970:75) found a small (0.9 by 1.5 m) wall-trench structure at the Hiwassee Island site. They tentatively identified the structure as a "storage crib or sweat house." And finally, at the Angel site, Glenn Black (1967:499), although unable to identify specific examples, suggested that granaries may be represented by some of the many miscellaneous postholes at the site.

Archaeological Data on Storage by Mississippian Chiefs

Information on Mississippian chiefs' storage is severely limited, making a large-scale survey on the subject impossible. Perhaps because so little archaeological evidence exists, few researchers have attempted to address the subject. Consequently, the information below is based on data from a small number of sites.

No storage pits were found to be associated with chiefs' houses. Although this negative evidence could be due to the general lack of data, it may well reflect reality.

As noted above, DeBoer (1988:9) found that storage pits were rare or absent at several Mississippian capitals. For example, only two definite storage pits were found at the extensively excavated Jonathan Creek site, a small capital in the lower Tennessee River valley (Webb 1952:62). The apparent lack of underground pits near chiefs' houses or indeed at capitals at all suggests that pits were unlikely to have been used as storage units by Mississippian chiefs. Two factors related to the economic role of chiefs support this contention: (1) the need for chiefs to store large amounts of produce (for which pits are not efficient) to buffer community-wide shortages and (2) the importance of displaying stored goods in the maintenance of chiefly power (concealed stores would be counterproductive).

Some fleeting archaeological data exist for the storage of goods within the chief's house. Polhemus (1990:131) reports that a structure identified as a "high-status dwelling" on the summit of the main mound at the Toqua site "closely resembled--in size, content, and use of floor space--the largest village structures near the plaza." These village structures contained storage areas in the corners. Further, structures on most mound stages are Polhemus's Type 4a, which is described as having storage in the corners (1985:57). By implication, then, the corners of the chief's house at Toqua were used as storage space. Granaries also existed at Toqua (see below). No other data on storage in the chief's house are available.

Data on chiefs' granaries indicate that they are located near the chief's house and are larger than ordinary granaries. At Toqua, for example, Polhemus (1990:131) describes secondary structures (interpreted as food preparation/storage buildings) as being associated not only with ordinary houses but also with residences on the main

mound. The mound-top secondary structures are larger than ordinary ones and take the form of pavilions at the front of the houses.

At the Lubbub Creek site, posthole patterns near a structure under the mound may indicate a granary (Blitz 1993:80-81). More importantly, Blitz (1993:96) postulates, based on comparative studies of vessel sizes,

> that the broad range of vessel sizes in the village samples reflects a variety of domestic household activities, while the narrower range in the mound suggests primary emphasis on large-group food consumption and perhaps storage.

Thus a greater amount of storage probably occurred on mound stages, near the chief's house.

Finally, Black (1967:504), extrapolating from documentary data, suggests (as one alternative) that a structure on a lower terrace of Mound A at Angel may have been a granary.

The Storage Facilities of Mississippian Chiefs

In summary, data on Mississippian storage are limited but present a fairly clear picture. Mississippian storehouses held primarily agricultural produce, most notably corn. Produce was kept in residences and raised granaries and to a lesser extent (usually at small sites) in storage pits. At capitals, presumably settled (or defended) year-round, in-house storage and above-ground granaries probably predominated.

Granaries were probably the primary means of Mississippian storage, but the difficulty of detecting them in the archaeological record precludes a more definite statement. Granaries were freestanding structures located near the entrances to their

owners' houses. Granaries were probably smaller than residences and were raised on poles and possibly sealed with clay plaster to mitigate insect and rodent damage.

The very clear written descriptions, along with a small amount of archaeological investigation, allow archaeologists to envision how to recognize granaries in the archaeological record. Archaeological correlates, based on the above information, include: (1) limited number of postholes; (2) small size of structure; (3) presence of plaster; (4) presence of charred corn or other plant remains; (5) lack of floor staining; and (6) location near a presumed residence, especially near its entrance. Notwithstanding this clear picture, the actual detection of granaries in the archaeological record is especially challenging, due primarily to the difficulty of recognizing posthole patterns for such small structures. Thus, to recognize granaries, excavators must remain vigilant and ever-aware of the possibility when working in the areas around houses.

Mississippian chiefs' storehouses were probably larger or more numerous than those of ordinary people. Chiefs may have stored non-food tribute items and/or traded goods (especially ones of value) as well as food products. Some storage (probably mainly of non-food items) occurred within the chiefs' houses.

Storage pits appear infrequently at capitals and are not found near chiefs' houses. Storage pits were probably not used by chiefs, partly because of their limited capacity and partly because they conceal contents rather than display them. Because chiefs' stores serve as symbols of power and prosperity, they are most effective when highly visible.

Chiefs' granaries undoubtedly stood near the chief's house. The implications of this statement for Mississippian sites have been virtually ignored in the excavation

of Mississippian capitals. If near the chief's house, a chief's granary must have stood on the main mound, the site of the chief's house. At the very least, a chief's granary would have stood at the foot of the main mound. Archaeologists should remain aware of these possibilities when carrying out excavations at Mississippian capitals and especially when excavating platform mounds.

Religious Structures

As was seen in Chapter 2, religious structures in chiefdoms vary in their nature, size, and location. Religious structures may be natural features, buildings, shrines, or part of the chief's house. Often they are devoted to ancestor worship, specifically to the veneration of ancestors of the chief, who become, in effect, the polity's ancestors. Small religious structures may occur in both large and small chiefdoms. However, large and monumentalized religious structures occur only in more complex chiefdoms. The monumentalization of religious structures indicates that the chief relies heavily upon religion as a basis for chiefly authority. Although religious structures in chiefdoms do not necessarily occupy prominent locations, many stand near the chief's house.

Documentary Data on Southeastern Religious Structures

Documentary data on Southeastern religious structures have been compiled by Chester DePratter (1991), who devotes a chapter to the subject in *Late Prehistoric and Early Historic Chiefdoms in the Southeastern United States.* Because this compilation explores the subject thoroughly, information from DePratter's synthesis will be relied on heavily in this section. Page numbers in parentheses refer to pages in DePratter's book.

The nature of Southeastern religious structures. Often called "temples" in documented descriptions, Southeastern religious structures served as ancestral shrines and tombs of the royal family and as the sites of important community rituals.

That the temple acted primarily as a chiefly ancestor shrine is indicated by three features: (1) the bones of former chiefs were stored there (p. 107); (2) burials of members of royal families took place in the temple (Black 1967:79-80); and (3) access was limited to chiefs, their immediate families, and the temple guardians (pp. 97-98).

As noted above, chiefly ancestors often take on the status of polity ancestors, in effect becoming founding spirits and lending an ancestral religious structure a community-wide significance. So it was in the Southeast. Not only were chiefly ancestors regarded as spirits in some areas (p. 107), but the living chief was seen as a spirit on earth (pp. 107, 113). The chief thus acted as a mediator between the spirit world and the ordinary world. So, the temple was not only the site of the worship or veneration of chiefly ancestors but the site of community rituals such as those related to planting, harvest, rainmaking, war, societal renewal, and probably succession of chiefs (pp. 108-112).

Religious personnel. Two types of religious personnel are described in historic accounts--the chief and temple guardians. In many Southeastern polities, the chief carried out important community-wide rituals (pp. 109-110), particularly those related to agriculture (p. 70). The chief was also one of the few individuals allowed access to the temple. Among the Natchez, at least, the high chief was specifically described as being "at the same time high priest and sovereign of the nation" (Neitzel 1965:71) and indeed was regarded as a spirit himself. DePratter suggests that this may have been true across the Southeast (p. 107).

Temple guardians appear to have been lesser religious personnel. They tended the sacred fire located in the temple (p. 112), carried out some rituals (p. 108), guarded the temple from unauthorized visitors (p. 112), and perhaps cleaned the temple (p. 100). It is unclear whether temple guardians were nobles or not. One could argue that the limited access to the temple implies that its guardians were also members of the chief's lineage. However, some temple guardians were subject to ritual execution if they failed in their duties (e.g., if they let the sacred fire go out) (p. 112), and Southeastern royalty were not usually subject to sacrifice (p. 76). Moreover, a chief might find it useful not to have a potential competitor (i.e., a relative who already held a certain amount of authority as a member of the ruling lineage) in charge of religious paraphernalia and duties and thus in a position to usurp the chief's religious authority. A commoner placed in control of religious activities, although invested with a certain amount of religious authority, would lack the social authority to challenge the chief effectively. Thus temple guardians were probably commoners appointed by the chief to carry out religious duties. The main religious personage in Southeastern chiefdoms appears to have been the chief, and temple guardians were his delegates. The temple, then, is highly associated with the chief.

Descriptions of religious structures. One sixteenth century observer (Ranjel) noted a temple atop a mound (p. 91). This was the temple at Talimeco which de Soto plundered, and, in doing so, provided a wealth of detail about Mississippian religious structures (Bourne 1922:101; Varner and Varner 1951:314-324). Despite several references to mounds and to temples in the de Soto accounts, Ranjel is the only chronicler to describe a temple on a mound.

Later accounts are similarly sketchy in regard to the locations of temples. Le Page du Pratz (1975:338, 351) clearly positions the Natchez temple on a mound, but as DePratter notes (p. 95), his is the only one of six accounts of the Natchez to do so. In DePratter's compilation, only two other groups (the Tunica and the Nabadache) are said to have had temples on mounds (pp. 91-93). Many other references to temples give no indication whether the structure stood on a mound or not.

The horizontal location of the temple within the capital is slightly better known than its vertical position. Garcilaso locates two sixteenth century temples (one at Talimeco and one at Capaha or Pacaha) on the plaza or near the chief's house (Varner and Varner 1951:314, 438). Similarly, some later temples were described in relation to the chief's house. Tonti located the Taensa temple "opposite the cabin of the chief" (Black 1967:280), and Charlevoix placed the Natchez temple "very near the great chief's cabin, . . . at the end of the square" (Neitzel 1965:68).

No early (i.e., sixteenth century) estimates of temple size exist other than Garcilaso's statement that the temple at Talimeco was 100 ft by 40 ft (p. 91). Unfortunately, Garcilaso's figures are always suspect partly because of the secondhand nature of his account and partly due to his consistent exaggeration of numbers. However, several later (seventeenth and eighteenth century) estimates of temple size, mostly from the Mississippi Valley are provided by DePratter in a table listing features of temples (pp. 91-93). A Taensa temple is described by different observers as 30 ft by 12 ft and as 100 ft across, while dimensions listed for the Natchez temple include 20 "toises" (or fathoms [Black 1967:275]) square, 30 ft square, and 40 ft by 20 ft. Acolapassa and Bayougoula temples are described as 22 ft by 14 ft and 30 ft across respectively.

It is difficult to compare these sizes to ones cited for chiefs' houses (see section above on chiefs' houses) because observers' figures vary widely and thus are not comparable to one another. But, in general, Southeastern temples seem to have been roughly similar in size to or slightly smaller than chiefs' houses. This tentative conclusion is supported by Le Page du Pratz's (1975: 338, 351) statements about the Natchez--both chief's house and temple were about 30 ft square.

The earliest temple for which shape is determinable is the temple at Talimeco which Garcilaso implied was rectangular (Varner and Varner 1951:315). Data for other sixteenth century temples are lacking. By the end of the seventeenth century and in the eighteenth century, temples are frequently described as circular (pp. 91-93), with the notable exception of the Natchez. Interestingly, both the Talimeco and Natchez temples are described not as square but as elongated rectangles by some observers (Varner and Varner 1951:315; Neitzel 1965:68) (though the Natchez temple is also described as square by Penicaut and Le Page du Pratz [Neitzel 1965:68, 70]). Charlevoix specifically notes that the Natchez temple's "shape is different [from the chief's house]; it is a long square" (Neitzel 1965:68).

DePratter found only one temple, that of the early eighteenth century Taensa, which had a palisade or wall around it (pp. 92, 95). According to Tonti (Black 1967:280), the Taensa temple was "surrounded with strong mud walls, in which are fixed spikes, on which they place the heads of their enemies . . . ." No clear evidence exists for palisades around temples in earlier years, though DePratter notes the presence at two sixteenth century temples (Capaha and Anilco) of heads placed "on lance points at the doors of the temple" (Varner and Varner 1951:493). It is unclear whether the "lance points" were part of a palisade.

Although accounts of temple furnishings vary somewhat from earliest to latest (p. 96), some features remained the same. From sixteenth century Cofitachequi and Talimeco to eighteenth century Natchez, temples contained statues of men and women and chests or baskets holding bodies (pp. 97-98). Other temple contents included a sacred fire (p. 104), statues or figurines of animals (p. 105), and wealth or authority items such as shells, pearls, feather headdresses, colored deerskins, weapons, and copper items (pp. 99-100).

Statues of human figures are clearly associated with temples in the historic record (pp. 97-98). The presence of such a statue in the archaeological record would thus constitute valuable evidence in identifying a Mississippian temple. These statues probably embodied spirits or ancestors and would thus have been regarded with great reverence. Indeed, according to Father St. Cosme (Black 1967:280), the Natchez looked upon their chiefs as spirits who were "descended from a kind of idol which they have in their temple . . . . It is a stone statue enclosed in a wooden box."

Southeastern temples often exhibited decorations on the exterior. Several accounts describe fine cane mats covering the walls (p. 94). These mats were renewed yearly by the Natchez. Temples also often had human or animal effigies near the door or on the roof (p. 94). "Guardian" figures (birds, bears, wolves, or humans) stood outside the temple door in some areas, and bird effigies, particularly eagles, were used as roof ornaments by several groups (p. 94).

Temples appear to have been separate buildings dedicated to religious purposes in most parts of the Southeast, but in at least one area (along the Atlantic coast), the chief's house served as a religious structure (p. 110). And on the far side of the Southeast, in the Caddo area, agricultural rituals were conducted in the chief's

house (p. 109). Both these variations, however, serve to emphasize the important role of the chief in Southeastern religion.

Archaeological Data on Mississippian Religious Structures

Despite the common use of the term "temple mound" by archaeologists and the general public, few researchers have actually identified specific mounds as the sites of temples. This is due partly to the limited data available and partly, perhaps, to a reluctance by researchers to extrapolate from documentary data. However, the historic accounts include descriptions of specific features of Southeastern religious structures, so it should be possible to recognize temples in the archaeological record.

Temples at Mississippian sites. At three sites (Angel, Fatherland, and Etowah), investigators have interpreted particular mounds as temple platforms. Brief descriptions of these mounds are presented below in the interests of acquiring additional information that will be helpful in recognizing temple platforms.

At the Angel site, Glenn Black interpreted Mound F as the site of a temple (1967:273, 514). He based his interpretation on the large size of the mound, the relation of Mound F to the main mound (across the archaeologically identified plaza), and the type of building uncovered on the summit of the primary mound (1967:273). Mound F, a square, flat-topped mound, is both the second largest and the second tallest mound at the site. It lies about 470 m southwest of Mound A which Black regarded as the site of the chief's house (1967:504). The excavated building on Mound F was an enormous (27 by 13 m) wall-trench structure enclosed by a wall or fence along the edge of the mound summit. A plan view (Black 1967:266) also shows postholes around the outside of the base of the mound. The building appears to have been divided into three rooms. A number of stone box bundle burials were found in

the mound (1967:256ff.), and, rather more tellingly in light of historic descriptions of stone statues in temples, a small fluorite statue of a seated man was buried in a pit near the surface of the mound (1967:248).

Mound C at the Fatherland site (convincingly identified as the Grand Village of the Natchez) was also interpreted as a temple platform by its excavator, Stuart Neitzel (1965:83). The wealth of description for the Natchez capital had persuaded Neitzel that burials or evidence of disinterred burials would be found in the mound underlying the temple. Mound C contained burials (some quite rich) and empty pits (presumed to be burial pits) while Mound B, previously thought to be the temple, held no burials. These features led Neitzel to identify Mound C as the site of the temple (1965:22). Mound C, a low rectangular mound, lies a short distance (140 m) south-southwest of Mound B (identified by Neitzel as the chief's house). Although dimensions are not available, a map of the site (1965:13) shows Mound C to be both lower and smaller in area than Mound B (although Neitzel [1965:14] says it "covered more area than Mound B" but provides no other information). A structure uncovered near the top of Mound C measured 19.8 m by 12.2 m and consisted of a 12.2 m square building with a portico attached to the northeast side (1965:28). Minus the porch, this structure was comparable in size to several uncovered in Mound B, three of which measured 14.0 m by 12.2 m, about 15.5 m square, and about 13.7 m square (1965:25-26). With the porch, the Mound C structure easily fits the description of a "long square" given by Father Charlevoix (1965:68) for the Natchez temple. At a lower level of the mound, two similar structures were uncovered.

At the Etowah site between 1925 and 1927, Warren K. Moorehead (1932) uncovered numerous burials in Mound C. These were accompanied by copper plates,

cane matting, pearls, eccentrically shaped flint blades, polished stone celts, copper-covered wooden disks, many shell beads, engraved shell gorgets, a monolithic stone axe, and a stone statue. Forty years earlier, John P. Rogan of the Bureau of American Ethnology had conducted excavations in Mound C and uncovered several rich burials accompanied by (among other things) the magnificent embossed copper plates now known as the Rogan plates (Thomas 1985:301-309). These findings led C. C. Willoughby to interpret Mound C as a temple platform and Mound A (the largest at the site) as the location of the chief's house (Moorehead 1932:63). Etowah has three major mounds; Mound C (the temple) and Mound B (which apparently contained no burials [Moorehead 1932:87]) are very similar in size, with Mound B being perhaps slightly larger and taller. Both mounds are many times smaller than Mound A (one of the largest and tallest platform mounds in the Southeast). Mound C lies very close to Mound A, about 90 m southwest. Lewis Larson (1971:60-61), who also interpreted Mound C as a "mortuary temple," uncovered more elaborate burials from Mound C, primarily around the edges of the mound inside a line of posts which surrounded the base of the mound (1971:59). Larson (1971:60) speculated that buildings stood on the top of the mound, but that evidence for these was destroyed in the earlier excavations of the mound.

More Mississippian temples identified. Based on information from documents, Black, Neitzel, and Willoughby identified several criteria for distinguishing temple sites at Mississippian capitals: (1) presence of burials, especially rich burials; (2) elongated buildings on mound summit; (3) prominent location (such as the top of a mound, near the plaza, or across the plaza from the chief's house); (4) fence or wall

around the mound; and (5) presence of stone or wood statuary. Using these criteria, several more temples may be identified.

At the eleven-mound Mineral Springs site in southwestern Arkansas, 21 burials were found in Mound 6, but none in Mound 8, the main mound (Bohannon 1973:5, 14, 43). Mound 6 is a rectangular, flat-topped mound about 225 m southeast of the main mound. It is the third largest mound at the site but only the fifth tallest mound (although two mounds are only slightly taller). The center of the mound was destroyed by the landowner in 1953, so excavators were unable to determine whether structures existed on the summit (Bohannon 1973:11-13). Grave goods accompanied many of the burials and included decorated pottery (bowls, bottles, beakers), long-stemmed pipes, elbow pipes, quartz crystals, copper-covered ear spools, projectile points, shell beads, shell disks, pigments (red, green, and yellow), and ground-stone celts (Bohannon 1973:16-40).

At the seven-mound Lake Jackson site in northwest Florida, 24 burials were recovered from Mound 3 (Jones 1982:10). No excavations have been undertaken in the main mound. Mound 3, a truncated pyramid about 4.9 m tall, stands only about 90 m south of the main mound. It is the third largest mound at the site and also the third tallest mound. Salvage excavations conducted by Calvin Jones during the mound's demolition by the landowner revealed evidence of structures on several of the 12 floors. Most of the burials contained grave goods. Many of the burials, in fact, were exceptionally rich. Grave goods included large embossed copper plates, smaller copper plates, embossed copper headdress ornaments, copper celts, engraved shell gorgets, conch shell cups, shell beads, pearl beads, galena, mica, and cane matting (Jones 1982:15-20).

At the enigmatic and possibly very early Ocmulgee site in central Georgia, more than 70 burials were excavated from Mound C, the Funeral Mound (Fairbanks 1956). Mound C is an oval, flat-topped mound standing about 335 m northwest of the main mound. Mound C is the second largest and second tallest mound at the site. Excavation occurred during the 1930s, and field notes were indefinite regarding the presence of structures on the seven mound summits. However, Charles Fairbanks (1956:20) concluded, based on mention of postholes, that "structures did exist on the flat tops of the several stages." A trench around the edge of mound stage 5 may be the remains of a palisade (1956:30). Unlike the burials at Mineral Springs and Lake Jackson, the Mound C burials in general contained few grave goods. Those that did occur included conch dippers, 26,000 olivella shell beads, bone pins, a greenstone celt, embossed copper plates, copper-covered puma jaws, and matting or basketry (1956:23-31).

The characteristics of these three mounds suggest that they, like Mound F at Angel, Mound C at Etowah, and Mound C at Fatherland, may be interpreted as the sites of Mississippian temples.

Burials and temple mounds. Documentary evidence indicates that temples rather than chiefs' houses were the sites of royal burials. Main mounds at Mississippian capitals have been interpreted earlier as sites of chiefs' houses, so it follows that a main mound should have few or no burials while at least one secondary mound should contain many. A brief survey of 23 sites with 2 or more mounds (and adequate excavation data) provides some support for this hypothesis (see Table 4-12). Main mounds at 13 of the sites contained no known burials.

Moreover, although main mounds at 10 sites contained burials, half of these held only 1 or 2 burials.

The generally small number or absence of burials in main mounds stands in sharp contrast to the contents of secondary mounds at some of these same 23 sites, a few of which were described above. Even more spectacular are burials from platform mounds at sites where the contents of the main mound are unknown--sites such as Etowah and Lake Jackson. It seems apparent that temples stood not on main mounds but on secondary ones. Moreover, the sites described above suggest a pattern for the locations of temples.

Each of the six mounds interpreted here as temple platforms are the second or third largest mounds at their respective sites and, with one exception, the second or third tallest mounds (see Table 4-13). This pattern makes sense in light of documentary descriptions and in view of the interpretations of the symbolic nature of platform mounds presented in earlier sections. The size of a mound represents the power of the individual or group directing its construction while the height of the mound probably expresses (at least partially) some form of authority (such as that based on social rank). Descriptions in documents clearly link the temple with the chief and thus with the polity as a whole. It seems likely then that the temple would stand on a larger or taller mound than any others at the site except for those that held dwellings belonging to the chief and members of the royal family who held important offices. A temple is thus likely to stand on the second or third largest or tallest mound at a site with two or more mounds.

Table 4-12. Presence or Absence of Burials in Main Mound.

Site	Known Burials in Main Mound		
	None	1 or 2	More than 2
Cahokia	X		
Lake George	X		
Angel	X		
Kincaid	X		
Mineral Springs	X		
Matthews	X		
Mason's Plantation	X		
Bessemer	X		
Hill Farm Stone Mounds	X		
Fatherland	X		
Medora	X		
Bayougoula	X		
Rood's Landing		X	
Parkin		X	
Snodgrass Island		X	
Tolu[1]		X	
Ausmus Mounds		X	
St. Louis			X
Powell			X
Toqua			X
Hiwassee Island			X
Rudder			X

[1] The excavators speculated that the one burial found in the Tolu main mound was intrusive.

Before leaving this subject, it should be noted that some mounds with burials may be not platform mounds but conical burial mounds that presumably were not the sites of temples. The burial areas at the Tolu and Bessemer sites listed in Table 4-12, for example, may in fact be non-platform burial mounds. Burials alone therefore cannot indicate the presence of a temple mound. Additional broad-scale research is needed to determine the different types of burial settings at Mississippian sites.

Table 4-13. Comparative Size and Height of Mounds Interpreted as Temple Platforms.

Size Class of Site	Site and Mound	Number of Mounds at Site	Number of Mounds Larger	Number of Mounds Taller
Very Large	Angel Mound F	11	1	1
	Etowah Mound C	6	2	2
Large	Ocmulgee Mound C	6	1	1
Medium-Large	Mineral Springs Mound 6	11	2	4[1]
	Lake Jackson Mound 3	7	2	2
Not classified	Fatherland Mound C	3	2	2

[1] Two of these are only 0.3 m taller than Mound 6.

It is also well to remember that more than one temple may exist at a capital, especially at larger ones. Secondary temples may be associated with other noble families and serve as their burial places.

Archaeological Correlates of Mississippian Temples

The documentary and archaeological records provide enough data to postulate six archaeological correlates of Mississippian temples. (1) At sites with two or more mounds, the temple will stand on a platform mound but not on the largest mound. At sites with one mound, the temple may be combined with the chief's house and thus stand on the only mound, or the temple may stand on ground surface. (2) At sites with two or more mounds, the temple will probably stand on the second or third largest or tallest mound. (3) The temple mound will contain structures and many

burials (especially rich ones), although burials may also be found in residential mounds (including the main mound) and in non-platform burial mounds. (4) The temple will stand near the plaza and not too far from the chief's house (i.e., the main mound). (5) The temple or temple platform may be enclosed by a wall or fence. (6) The temple may contain stone or wood statuary. These archaeological correlates should prove useful in identifying additional Mississippian temples and thereby contribute to our knowledge of Mississippian religion.

Communal Structures

A communal house is a place where the people of the community gather to (1) conduct governmental business, i.e., make decisions about the community as a whole; (2) hold community-wide rituals or activities; and (3) socialize. In chiefdoms, many of these activities are carried out at the chief's house. Consequently, communal buildings may be less common in chiefdoms than in egalitarian societies. In the chiefdom survey reported in Chapter 2, communal houses were clearly present in only 8 of 30 chiefdom areas. When communal buildings are present they may be either larger or smaller than the chief's house, and they are usually located near the chief's house or in a prominent location. Beyond this, ethnographic data on communal buildings are inconclusive and sketchy.

Documentary Data on Southeastern Communal Houses

Descriptive accounts of the Southeast contain many references to "council houses," one type of communal building. Most of these references, however, date to the seventeenth and eighteenth centuries; few early accounts appear. Gary Shapiro and Bonnie McEwan, who have compiled a summary of historic descriptions on

council houses (1992:7-17), note only three instances for the sixteenth century, all outside the Mississippian world.

Typical activities carried out in Southeastern council houses included (1) meetings of chief and council to conduct governmental business (Shapiro and McEwan 1992:7, 8, 10, 15; Black 1967:500); (2) reception and housing of foreign visitors (Shapiro and McEwan 1992:8, 14, 15; Swanton 1922:64); (3) community rituals (Shapiro and McEwan 1992:9); (4) preparations for war (Shapiro and McEwan 1992:9); (5) social gatherings (Shapiro and McEwan 1992:12, 14; Black 1967:500); (6) public assemblies (Shapiro and McEwan 1992:12; Black 1967:500); and (7) housing of the old and indigent (Black 1967:500). This information comes from accounts of council houses among the Apalachee, Edisto, Creek, Guale, and Timucua, not all of whom lived in what had formerly been the Mississippian world. Moreover, most information dates to the seventeenth or eighteenth centuries.

Physical descriptions of council houses across the Southeast are very similar (Shapiro and McEwan 1992:7-17; Black 1967:500; Swanton 1922:64). Council houses, sometimes called town houses, rotundas, or hot houses, usually stood adjacent to the plaza. They were circular in form and were sometimes built on a mound or elevated area. The outer walls were sometimes decorated with painted figures, and the interiors were furnished with central hearths and benches around the perimeters of the buildings.

Archaeological Data on Mississippian Communal Houses

Very little archaeological information exists on communal houses, and what does exist hinges on excavators' interpretations of buildings as such. Several investigators (Black [1967:500] at Angel, Lewis and Kneberg [1970:70] at Hiwassee

Island, and Schnell et al. [1981:63, 137] at Cemochechobee) found circular structures which they interpreted as communal buildings. Their interpretations all stemmed from comparisons with eighteenth century Cherokee town houses and Creek rotundas.

In addition to council houses, other types of structures may have served as communal buildings. For example, at two sites (Moundville and Angel), structures described as "sweat houses" stood inside or near the plaza (Walthall 1980:216; Black 1967:499-500). And Richard Polhemus (1985:120) identifies "public buildings" with little evidence of domestic use at the Toqua site. At least one of these stood on the main mound adjacent to a "high status domestic structure."

Mississippian Communal Houses Summary

Southeastern council houses show many similarities in description and activities to chiefs' houses (see Tables 4-14 and 4-15). A description of a Timucuan "council house" cited by Shapiro and McEwan (1992:7), for example, could just as easily describe a chief's house (Bennett 1975:14 quoted in Shapiro and McEwan 1992:7).

> They meet together every morning in the great public house where the king is and where he sits on a seat higher than all the others. There each . . . comes and salutes him . . . . If there is business to transact, the king calls the priests and also the elders and asks their advice. Then he orders some caseena . . . . They esteem this beverage so much that no one can drink of it in this assembly if he has not already proven himself to be a warrior.

Moreover, the description of a Taensa chief's house quoted earlier (see Chief's House section above) contains several elements also descriptive of council houses: a chief surrounded by a large group of advisors; a fire in the center of the building;

seats around the edges of the building (Black 1967:504). It differs only in being apparently rectangular and in being identified as a chief's house.

Table 4-14. Features of Chiefs' Houses and Council Houses in the Southeast.

Feature	Chiefs' Houses	Council Houses
Elevated	X	X
Adjacent to plaza	X	X
Large size	X	X
Porch(es)	X	
Decorated	X	X
Benches along inside walls	X	X
Central hearth	X	X
Skylight		X[1]
Rectangular form	X	
Circular form	?[2]	X

Note: Not all features existed in all chiefs' houses or in all council houses.

[1] These seem to have occurred primarily in areas outside the former Mississippian world.

[2] A small number of circular buildings stood on main mounds, locations interpreted here as sites of chiefs' houses.

Further clouding the issue, the word used by the Spaniards and usually translated as "council house" is *bujio* (Hann 1988:340-341; Shapiro and McEwan 1992:12), a Taíno word used in other parts of the Spanish American empire to designate a dwelling. Mary Helms (1979:9-10), for example, describes "the *bohíos*, or dwelling compounds, of the high chiefs" in Panama. Furthermore, a *bohio* among the Taíno specifically referred to a chief's house, distinguishable in form from the houses

of commoners (Wilson 1991:57). These usages suggest that *bujio* (although perhaps sometimes applied to a council house[6]) may at times refer to a dwelling rather than to a communal building.

Table 4-15. Activities Carried Out in Southeastern "Council Houses" Compared to Those Carried Out in Chiefs' Houses Worldwide.

Activity	Chiefs' Houses Worldwide	Southeastern Council Houses
Housing of chief and household	X	
Meetings of chief and council (i.e., conduct of government)	X	X
Community rituals	X	X
Public assemblies	X	X
Reception of visitors	X	X
Housing of visitors	X	X
War preparations	X[1]	X
Social gatherings	X	X
Housing of old and indigent	X[2]	X

1 War preparations are included here by virtue of being a governmental activity.

2 Chiefs' households often included members of the community unable to support themselves.

This brings up the possibility that the later "council houses" are really chiefs' houses, and the difference is merely a semantic one. Even if no question exists about

6 ". . .They gathered in the *bujio*, which is to say, the houses of their government" (Hann 1988:340-341 quoted in Shapiro and McEwan 1992:9) and "Each village has a council house called the great *bujio*" (Wenhold 1936:13 quoted in Shapiro and McEwan 1992:12).

the terminology (as in eighteenth century accounts which identify council houses in English [Van Doren 1955:357]), observers might easily have interpreted the chief's house as a council house because of the constant presence of conciliar advisors. What is not clear from the council house descriptions, however, is whether these buildings served as residences for chiefs' households.

One may argue against similar functions by citing the different shapes of the buildings. Mississippian chiefs' houses are generally rectangular (see above), while most colonial period Southeastern council houses are circular (Shapiro and McEwan 1992:15). Studies of the relationship between house form and cultural factors (although far from definitive) have postulated that circular buildings house less complex activities and fewer materials associated with those activities than do rectangular ones (Hunter-Anderson 1977:303-305) and that circular structures reflect more egalitarian societies than do rectangular ones (Deaver 1989:249). Following this reasoning, it might seem logical to suggest that council houses reflect a changed political structure (one more egalitarian than earlier chiefdoms), but some problems exist with this line of thought.

First, the shift in form from rectangular Mississippian chiefs' houses to later circular council houses may be more apparent than real. Take, for example, the best known council house--the enormous structure at San Luis in Apalachee, known both from documents and from archaeological excavation (Shapiro and McEwan 1992). No chiefs' houses have been identified from Apalachee's powerful Mississippian predecessor (the polity whose capital was the Lake Jackson site), but all ordinary houses that have been excavated have been circular (Tesar 1980:779-781; Scarry 1984; Payne 1982). This suggests that Mississippian Apalachee was one of those few areas

of the Mississippian world where circular structures were common. Public buildings, then, whether chief's house or council house, might also be expected to be round.

Other examples of circular council houses come from areas outside the former Mississippian world (Timucua and perhaps Guale) or marginal to it (Edisto). As a result, they cannot be used to identify shifts in political structure between Mississippian chiefdoms and their descendants. It is also unclear what the typical building shapes were for these areas in precolumbian times.

It cannot be denied, however, that a shift in form of public buildings occurred in at least two areas of the former Mississippian world--the Creek and Cherokee regions. In both these areas, however (at least at the specific locations described in documents), the chiefdoms that existed during Mississippian times were small-scale polities (cf. Curren 1984; Dickens 1976), probably not very different in power and scale from those described historically. No structural shift to more egalitarian societies need be postulated. The changed form of the public building in these areas consequently remains unexplained.

A final difficulty with the interpretation of circular buildings as indicative of egalitarian societies comes from the documented activities occurring in council houses. As noted above (see Table 4-15), these were many and diverse, encompassing nearly as great a range as those occurring in chiefs' houses. Moreover, some circular council houses were apparently quite large, with permanent interior furnishings. These features contradict statements that circular structures are typically small (Flannery 1972 cited in Hunter-Anderson 1977:313-314) and that they have associated with them few activities and a low volume of materials (i.e., furnishings) (Hunter-Anderson 1977:305-306).

The circular council houses of the seventeenth and eighteenth centuries (at least those in areas where rectangular chiefs' houses had previously existed) were probably the transformed successors to Mississippian chiefs' houses. It is presently unclear whether council houses were the residences of chiefs, but descriptions indicate that they were the loci of many of the same activities associated with chiefs' houses and shared most physical characteristics.

The identification of Mississippian communal houses thus remains indefinite, partly due to the difficulty surrounding the nature of later council houses. Because of this difficulty archaeologists must exercise considerable care in the excavation and interpretation of presumed communal houses at Mississippian sites.

Public Spaces

For many years, archaeologists have seen plazas or town squares in the spaces defined by mounds (e.g., Fowler 1978:462; Phillips et al. 1951:316). This is partly because the arrangements themselves suggest such public spaces and partly because written accounts of contact period Mississippian settlements contain many descriptions of plazas.

Documentary Evidence for Plazas in the Southeast

Glenn Black (1967:514-524) provides an excellent summary of documented information on town squares in eastern North America. The reader is referred to that review for details, but a few points are worth repeating here. The following discussion draws largely on Black's compilation (page numbers refer to his work).

Black found descriptions of plazas or town squares from many parts of the Southeast and Midwest, including areas outside the Mississippian world (e.g., the

Mandan of the Upper Missouri Valley and the Tidewater towns of North Carolina and Virginia). References to plazas begin in the accounts of the early sixteenth century explorers and continue through time to the end of the eighteenth century.

Location. Chroniclers frequently assign a prominent location to the plaza. Almost always the chief's house and the temple stand immediately adjacent to the plaza (e.g., the Natchez [p. 516], the non-Mississippian town of Secota [p. 514-515]). Moreover, the plaza is sometimes described as surrounded by the large houses of nobles and other important people (Varner and Varner 1951:354).

Activities. Activities carried out in the public square include community rituals (e.g., first fruits festivals and black drink ceremonies), ritual athletic contests (especially the chunky game), dances, entertainment of visitors, and governmental activity (pp. 516, 517, 519, 522). These activities correspond to the typical activities carried out in plazas at chiefly capitals in general (see Chapter 2).

Condition. Several references cited by Black describe the effort expended in maintaining the plaza (pp. 518-519). Plazas were swept, cleaned up, and sometimes covered with white sand, especially before important ceremonies. Careful maintenance sometimes resulted in the creation of a low ridge of sweepings around the plaza. Archaeologists discovered evidence of a similar feature at the seventeenth century town of San Luis in Apalachee, where a low ridge encircled a flat area comparatively free of structures and debris (Shapiro 1987:27; Hann 1988:207). All the references to upkeep of public spaces date to the eighteenth century, but the practice of maintaining the plaza may have extended back in time as well. Archaeologists have found areas cleared not only of structures but of debris at Mississippian sites (see below).

Archaeological Data on Plazas at Mississippian Sites

Ample archaeological evidence exists for such cleared areas at Mississippian sites. One or more plazas have been identified not only at mound centers but at other types of Mississippian sites as well. The Snodgrass site (a non-mound community in southeastern Missouri), for example, contains a clearly defined plaza (Price 1978:218-219). And, although Jon Muller (1986:195) found that farmsteads and hamlets in the lower Ohio River valley lack plazas, John Scarry (1984:10) postulates an open space between the two houses of the Velda farmstead site in northwest Florida.

Plazas at mound centers. Plazas are clearly characteristic of many types of Mississippian sites, but the best data come from mound sites. As noted earlier in this chapter, 67 mound centers out of 91 sites examined exhibit plans which include architectural spaces reminiscent of plazas. Moreover, archaeological investigations at several sites have documented the presence of plazas. At the Angel site, for example, Black (1967:344) drew on his ethnohistoric research to postulate that a cleared, low-lying area between two major mounds served as a plaza.

Researchers at Cahokia have carried out what may be the most comprehensive investigations at a Mississippian plaza (Holley et al. 1993). George Holley and his colleagues found evidence of considerable landscape modification to the "Grand Plaza" south of Monks Mound, including episodes of landfill, mining of earth for mound construction, and reclamation of borrow pits (Holley et al. 1993:315).

At most sites, however, plazas are identified solely through negative evidence, the absence of cultural material (e.g., Phillips et al. 1951:316). The nature of the evidence (or non-evidence) often leaves little for the archaeologist to say about the plaza area, beyond the simple identification of a cleared space. On this basis, one or

more plazas have been identified at Cahokia, Lake George, Angel, Parkin, and Upper Nodena (Holley et al. 1993; Williams and Brain 1983:73; Black 1967:344; Morse 1981:23; Morse 1989:99). The difficulty in dealing with negative evidence to study a feature may be why, as Holley and his colleagues point out (1993:306), "plazas have been largely ignored in archaeological investigations."

Constraints in identifying plazas. In defining plazas at mound centers, archaeologists must take care not to be swayed by the arrangements of the mounds themselves. While the architectural spaces thus defined are important structural elements, they may not (in fact, probably do not) coincide with the boundaries of the plazas. This can be seen at sites where research has revealed the distribution of houses. At sites such as Upper Nodena and Sikeston, houses often intrude into architectural spaces and crowd around the mounds (Morse 1989:98; Chapman 1980:196). The distribution of structures rather than the distribution of mounds defines the plazas.

Summary

Public spaces, if not a universal feature of settlements in chiefdoms, are certainly widespread. Two-thirds of the chiefdom areas examined in Chapter 2 had settlements that included public spaces. Moreover, plazas are not limited to capitals but occur in ordinary settlements as well.

Plazas serve as the locales for community and daily activities as well as for those related to the maintenance of chiefly power and authority (e.g., massing people to show strength, conduct of government, chiefly rituals). This double purpose (and the ubiquity of plazas in many different kinds of settlements worldwide, including settlements in egalitarian and state societies) should caution archaeologists not to

ascribe undue importance to the presence of a plaza. The absence of a plaza rather than its presence demands explanation.

Architectural spaces are typical features of Mississippian mound centers, and cleared areas are known archaeologically at some sites. This information, combined with historic accounts of town squares, indicates that plazas are important elements in the structure of mound centers.

Plazas at Mississippian mound centers are prominently located, usually near the chief's house. Various community, ritual, and political activities occurred in the plaza which was kept clean by sweeping. Plazas are found at ordinary Mississippian settlements as well as at capitals. Because the boundaries of plazas are formed by the distribution of houses rather than by the distribution of mounds, architectural spaces created by the layout of mounds do not necessarily coincide with plazas. Archaeologists should exercise care then in identifying Mississippian public spaces, using subsurface investigations rather than arrangements of mounds to define plazas.

Walls

As noted in Chapter 2, walls at chiefly capitals are erected for both practical and social/symbolic purposes. Walls built for practical reasons are usually external walls constructed for defense or security from wild animals. Internal walls generally serve social or symbolic purposes, segregating people, marking social boundaries, or defining restricted areas.

Walls in the Documentary Record

External walls. External walls in the Southeast occurred in the form of defensive palisades or stockades around settlements. John Swanton (1979) and Glenn

Black (1967) both compiled data on stockades, thus providing a clear picture of fortifications from the sixteenth century to the eighteenth century.

Fairly detailed descriptions exist regarding fortifications during the sixteenth century. De Soto expedition chroniclers described many towns as being fenced or stockaded (see Table 4-16). Rodrigo Ranjel (Bourne 1922:115) summed up the nature of a typical sixteenth century Mississippian palisade in his description of an unnamed town two days beyond Tuasi.

> [The village] had two fences and good towers, and these walls are after this fashion: They drive many thick stakes tall and straight close to one another. These are then interlaced with long withes, and then overlaid with clay within and without. They make loopholes at intervals and they make their towers and turrets separated by the curtain and parts of the wall as seems best. And at a distance it looks like a fine wall or rampart and such stockades are very strong.

Some geographic variation regarding the presence of fortifications apparently existed. Biedma and Ranjel remark on their first encounter with fortified settlements only after more than a year of travel (Bourne 1922:15, 108). This occurred in Chiaha (located by Charles Hudson and his colleagues on the French Broad River, a tributary of the Tennessee River [Hudson et al. 1984:74-75]). By implication, then, the de Soto expedition did not find fortified settlements in present-day Florida, Georgia, and South Carolina.

Accounts by later observers yield less comprehensive data, but they do indicate that fortifications continued to exist in some areas and were similar in form to the early ones (although some European influence may have crept in). Swanton (1979:437), for example, cites a description by Iberville of a Biloxi village in 1700.

> The village was surrounded with palings eight feet in height, of about eighteen inches in diameter. There still remain three watch towers measuring ten feet on each face; they are raised to a height of eight feet on posts; the sides made of mud mixed with grass, of a thickness of

> eight inches, well covered. There were many loopholes through which to shoot their arrows.

And Le Page du Pratz's (1975:375) generalized description of eighteenth century forts in Louisiana presents a similar picture. Forts, he says, are

> built circularly of two rows of large logs of wood . . . . These logs are about fifteen feet long, five feet of which are sunk in the ground . . . . At every forty paces along the wall a circular tower juts out . . . .

Internal walls. Almost no documentary data exist regarding the presence of internal walls in Southeastern towns. One reference to a wall around an early eighteenth century Taensa temple was noted in a previous section (Black 1967:280), and the de Soto accounts contain a reference to the building of a cane fence around a cross de Soto erected on top of a mound at Casqui (Bourne 1922:28). This latter incident, although involving a Christian icon, may indicate an inclination on the part of Southeastern peoples to enclose important authoritative structures. Beyond these two observations, little can be said about internal walls.

Archaeological Data on Walls

External walls. Two types of external walls appear in the archaeological record at Mississippian sites: earthen embankments, sometimes accompanied by ditches, and wooden palisades. These have been interpreted as defensive works erected in the face of widespread Mississippian warfare. Several researchers have analyzed the nature of this warfare (Larson 1972; Lafferty 1973; Gibson 1974; DePratter 1991:39-56; Milner et al. 1991; Steinen 1992), and the reader is referred to them for information on the subject. This section focuses not on the nature of warfare but on the presence or absence of defensive works at mound centers and the forms they take.

Table 4-16. Fortifications Described by Chroniclers of the De Soto Expedition.

Settlement	Features of Fortifications	Chronicler
towns in Chiaha	Fence	Ranjel
	Fence	Biedma
Ullibahali	Fence of large timber Poles crosswise to uprights Plaster inside and out Loopholes	Elvas
Talise	Wood and earth rampart	Garcilaso
town two days beyond Tuasi	Two fences of thick stakes Bastions Uprights interlaced with "long withes" Plaster inside and out Loopholes	Ranjel
village one day before Mabila	Fence	Ranjel
Mabila	Large, tall stockade of wooden beams Long crosspieces bound with split cane and ropes Hard plaster of mud and straw Bastions every 50 ft Loopholes Two gates (east and west)	Garcilaso
	Stockade	Biedma
Pacaha (Capaha)	Fence Moat	Biedma
	Moat 40-50 ft wide Fence Plaster of mud and straw	Garcilaso
Guachoya	Fence	Biedma
	Palisade	Elvas
Aminoya	Fence	Biedma
	Stockade	Elvas

The presence or absence of fortifications was discussed earlier in this chapter to compare the presence of fortifications with the degree of site compactness. That discussion was limited to the 66 sites which had data on compactness (i.e., data on number of mounds and mound precinct area). In this section the coverage has been expanded to include sites which have adequate descriptive data about fortifications or which have site plans enabling the researcher to determine the presence or absence of earthworks.

All data on fortifications are constrained by the exigencies of differential preservation of features. Moreover, while earthworks may be identifiable in the absence of archaeological investigation, the identification of palisades and bastions is dependent upon archaeological excavation. It is thus possible to identify some fortified sites definitively, but it is not possible to identify unfortified sites with certainty. The apparent absence of fortification features may be due merely to incomplete investigation of a site. As a result, sites without fortification features will be described here as "Not Known to be Fortified" rather than "Unfortified."

A total of 132 sites were examined for data regarding the presence or absence of embankments, ditches, palisades, or bastions. Fortifications occurred at 47 sites (35.6%), while 85 sites (64.4%) contained no apparent defensive works. The percentage of fortifications present in this sample (35.6%) is similar to that for the smaller sample considered earlier in the compactness section (33.3%). It appears, then, that more than one-third of Mississippian mound centers were fortified. Because so few sites have been thoroughly examined in the field for fortifications, this estimate is undoubtedly conservative; an estimate of at least 50% would probably not be unreasonable.

Table 4-17 shows data about the presence or absence of fortifications by site size class. Percentages of sites that are "Fortified" and "Not Known to be Fortified" are calculated within each size class for comparison to the percentages for all sites (listed in the last line of the table). Sites from all size classes are fortified, most in proportions roughly similar to the overall proportions. The three largest classes (Cahokia, Very Large, and Large), however, show much higher percentages of fortified sites. At least two possibilities exist to account for this pattern. First, better data may exist for larger sites, perhaps the result of more archaeological investigation than at smaller sites. Second, larger sites may be more likely to be fortified than are smaller sites. Even if this second is true, it is important to remember that fortifications occurred at mound centers of all sizes including the very smallest.

Table 4-18 shows data about the presence or absence of fortifications by location within the Mississippian world. Percentages of sites that are "Fortified" and "Not Known to be Fortified" are calculated for central and for peripheral locations for comparison to the percentages for all sites (listed in the last line of the table). Sites from both areas contain fortifications, but proportionately fewer peripheral sites have defensive works. It appears that peripheral sites were less likely to have been fortified than were central sites. This pattern will be examined more closely in the following sections on earthworks and palisades.

Earthworks, in the form of embankments or ditches, occur at 34 (25.8%) of the 132 sites (see Table 4-19). Ten sites have both embankments and ditches, while eighteen sites have embankments only and six sites have ditches only.

The sizes of mound centers with earthworks varies from Very Small to Very Large (see Table 4-19), suggesting that size is not a factor in the presence of earthworks.

Table 4-17. Fortifications at 132 Mississippian Mound Centers by Size Class.

Size Class	Fortified Sites		Sites Not Known to be Fortified		Total Sites
	Number	%[1]	Number	%[1]	
Cahokia	1	100.0	0	0	1
Very Large	4	66.7	2	33.3	6
Large	4	66.7	2	33.3	6
Medium-Large	7	38.9	11	61.1	18
Medium-Small	9	31.0	20	69.0	29
Small	4	28.6	10	71.4	14
Very Small	10	35.7	18	64.3	28
Indeterminate	8	26.7	22	73.3	30
All sites in sample	47	35.6	85	64.4	132

[1] Percent of total sites in sample in each size class.

Table 4-18. Fortifications at 132 Mississippian Mound Centers by Location in the Mississippian World.

Location in the Mississippian World	Fortified Sites		Sites Not Known to be Fortified		Total Sites
	Number	%[1]	Number	%[1]	
Central	39	39.4	60	60.6	99
Peripheral	8	24.2	25	75.8	33
All sites in sample	47	35.6	85	64.4	132

[1] Percent of total sites in sample in each location.

Table 4-19. Mississippian Mound Centers with Defensive Earthworks.

Site	Embank-ment	Ditch	Size Class of Site
Lake George	X	X	Very Large
Lilbourn	X	X	Medium-Large
DeGraffenreid	X	X	Medium-Large
Sandy Woods	X	X	Medium-Large
Florence	X	X	Medium-Large
Towosahgy	X	X	Medium-Small
Powers Fort	X	X	Medium-Small
Matthews	X	X	Medium-Small
Sellars	X	X	Very Small
McLeod Bluff	X	X	Very Small
Angel	X	-	Very Large
Mound Bottom	X	-	Large
Savannah	X	-	Large
Sikeston	X	-	Medium-Large
Mulberry	X	-	Medium-Large
Obion	X	-	Medium-Large
Clarksdale	X	-	Medium-Small
Perkins	X	-	Medium-Small
Crosno	X	-	Medium-Small
Peter Bess	X	-	Medium-Small
Old Town	X	-	Very Small
Stalonia	X	-	Very Small
Chucalissa	X	-	Very Small
West Harpeth River	X	-	Very Small
Sumner County Mounds	X	-	no data
Linn	X	-	no data
Wardell	X	-	no data
Lakeville	X	-	no data
Etowah	-	X	Very Large
Ocmulgee	-	X	Large
Shoulderbone	-	X	Medium-Small
Upper Nodena	-	X	Medium-Small
Lubbub Creek	-	X	Very Small
Parkin	-	X	no data

Some evidence exists to indicate that sites with earthworks are less common in peripheral areas of the Mississippian world than in central parts. Only 4 of 33 mound centers in peripheral areas have earthworks. This proportion (12.1%) is half that for

all sites in the sample (25.8% of the 132 sites have earthworks). Conversely, 30 (30.3%) of 99 sites in central areas have earthworks.

Lewis Larson (1972:384) has suggested that ditches regularly accompanied palisades as part of the defensive works. Evidence from the sites studied here casts some doubt on this statement. Eighteen sites in this sample provided clear evidence of palisades (see below and Table 4-20). Only four of those also had ditches. Ditches, of course, can fill up with debris, obliterating their outlines, so these figures (especially given the small number of sites) may be misleading. The association of ditches with palisades, however, remains very tentative. Clearly, better evidence is needed before such a conclusion can be drawn.

In contrast to his suggestion that ditches were intentionally dug, Larson (1972:384) speculates that embankments were probably accidental, resulting from the accumulation of debris along a palisade line or from a collapsed palisade. Unfortunately, most sites with embankments in this survey do not have data on palisades. However, in at least one case (Lake George), a palisade was constructed on top of an embankment (Williams and Brain 1983:68), suggesting intentional construction of the embankment. Other than this instance, evidence regarding the construction of embankments is not presently available.

Robert Lafferty (1973:85-86) holds a slightly different view regarding the construction of earthworks. He suggests that ditches are frequently associated with embankments. Both, he postulates, could be constructed at the same time, with dirt from the ditch forming the embankment. This would effectively create two defensive obstacles with the same amount of effort needed to build one. In this survey 16 sites had ditches, 10 (62.5%) of which also had embankments. The data from this survey

Table 4-20. Mississippian Mound Centers with Palisades or Bastions.

Site	Palisade	Bastions	Size Class of Site
Cahokia	X	X	Cahokia
Lake George	X	-	Very Large
Moundville	X	X	Very Large
Angel	X	X	Very Large
Etowah	X	X	Very Large
Kincaid	X	X	Large
Jonathan Creek	X	X	Small
Toqua	X	X	Small
Gunter's Landing	X	X	Small
Hiwassee Island	X	-	Small
Lubbub Creek	X	X	Very Small
Sellars	X	X	Very Small
Cool Branch	X	X	Very Small
Town Creek	X	-	Very Small
Irene	X	-	Very Small
Corbin	X	X	no data
Gordontown	X	-	no data
Lamar	X	-	no data
Savannah	?	X	Large
Mound Bottom	?	-	Large
Sumner County Mounds	-	X	no data

Note: Question marks indicate a palisade may exist at the site but the data are unclear.

thus supports Lafferty's interpretation. The possibility of a variety of construction techniques across the Mississippian world should be kept in mind, however.

Palisades have been discovered at 18 of the 132 sites and may have existed at 2 others (see Table 4-20). This accounts for 15.2% of the total sample, a lower proportion than for sites which have earthworks (25.8%). The smaller proportion may result from the necessity of subsurface investigation to identify palisades. Undoubtedly, palisades will be discovered at many more sites as archaeological investigations continue.

Palisades are present at sites ranging from Very Small to Cahokia, although no medium-sized sites are represented. This lack may be a result of differential collection of data or just a fluke due to the small sample size. It is probably not an indication that palisades were absent at medium-sized sites.

Sites with palisades are equally common in central parts of the Mississippian world and in peripheral areas. In both cases 15.2% of the sites in the area have palisades, exactly the same proportion as for all sites. These figures suggest that sites throughout the Mississippian world are equally likely to be palisaded.

Bastions or projecting watchtowers (rare in earlier times [Lafferty 1973:139]) often appear in Mississippian stockades. Bastions have been identified at 14 of the 132 sites (10.6%) (see Table 4-20). Because they are associated with wooden palisades, bastions are usually defined only through subsurface testing. However, at 2 of the 14 sites bastions are distinguishable in the sites' earthworks. Of 18 sites for which clear evidence of a palisade existed, 12 (66.7%) had bastions. These included both large and small sites. This high percentage indicates that bastions were a common feature of Mississippian stockades.

The spacing of bastions at Mississippian mound centers is fairly regular, ranging from 18 to 40 m (with one exception) (see Table 4-21; DePratter 1991:43; Lafferty 1973:133-134). This regularity undoubtedly occurs because the spacing of bastions depends on the range of the defenders' weapons (Lafferty 1973:16). That is, in order to protect the curtain wall completely, bastions must be placed no farther apart than twice the maximum effective range of firepower, thus allowing defenders in adjacent bastions to protect the curtain wall between. The distance between

bastions is not associated with the size of the site or the length of the surrounding wall.

Table 4-21. Spacing of Bastions at Mississippian Mound Centers.

Site	Distance between Bastions (in meters)	Size Class of Site
Cahokia	20-40	Cahokia
Moundville	35-40	Very Large
Angel	30	Very Large
Etowah	NA	Very Large
Kincaid	30-35	Large
Savannah	73	Large
Jonathan Creek	19	Small
Toqua	18	Small
Gunter's Landing	24	Small
Sellars	NA	Very Small
Lubbub Creek	30	Very Small
Corbin	NA	no data
Sumner County Mounds	NA	no data

One site stands apart from the others in the spacing of its bastions. At the now-destroyed Savannah site on the Tennessee River, bastions (known from earthworks, not from excavations) occur at 73 m intervals (Thruston 1973:43). Although this distance is not outside the realm of possibility for bow-and-arrow-defended ramparts (Lafferty [1973:136] estimates that the maximum effective range of Mississippian arrows was about 40 m), the difference between this and other sites suggests that the information on the Savannah earthworks may be inaccurate or that the earthworks may date to a later time period.

Internal walls. Data regarding internal walls come from several sites. At most of these, the internal wall surrounds a mound or the summit of a mound. Fences encompass Mound C at Etowah and the Bessemer burial mound (Larson 1971;

DeJarnette and Wimberly 1941:61). As noted in an earlier section, Mound C contained high-ranking burials; many of these were placed at the edge of the mound inside the fence (Larson 1971:61). At the Lubbub Creek site, a fence may have enclosed the mound (Blitz 1993:54-55; 118), but not as completely or as closely as at the other two sites. Fences appear around the summits of mounds at two sites: Angel Mound F and Ocmulgee Mound C (Black 1967:266-268; Fairbanks 1956:30). Both of these mounds have been interpreted as the sites of temples.

Internal walls also appear in other settings. At the Town Creek site (Morgan 1980:113), a non-mound building was enclosed by a fence, one side of which was formed by the site palisade. At the Bessemer site, a fence enclosed an open area in front of a small building near the main mound (DeJarnette and Wimberly 1941:44, 56).

Walls at Mississippian Mound Centers

Historic accounts and archaeological data agree quite well on the nature of external walls at Mississippian mound centers. These took two forms--earthworks and palisades--and apparently functioned as defensive fortifications.

Earthworks typically consisted of an embankment and/or ditch around all or a portion of the mound center (Varner and Varner 1951:436). Often embankments and ditches occurred together. Ditches sometimes filled with water to form a moat (Varner and Varner 1951:436; Williams and Brain 1983:68). Archaeological evidence indicates that earthworks are less common in peripheral areas of the Mississippian world than in central areas.

Archaeological data indicate, however, that palisaded sites occur equally in both central and peripheral areas of the Mississippian world, though de Soto expedition chroniclers imply that sites in the peripheral Atlantic Coastal Plain lacked

fortifications. Combining archaeological and documentary data, a clear picture of Mississippian palisades emerges. Palisades were built of logs typically 20-50 cm in diameter and about 2.5-3.5 m tall (Lafferty 1973:69; Swanton 1979:437; Varner and Varner 1951:353-354, 436). Flexible poles were bound to the uprights with cane and the whole framework plastered with clay (B. Smith 1968:78-79; Bourne 1922:115; Varner and Varner 1951:353-354), probably to retard fire (Lafferty 1973:107-108; DePratter 1991:41). Holes were cut in the walls to shoot through (B. Smith 1968:78-79; Bourne 1922:115; Varner and Varner 1951:353-354). Stockades commonly included bastions or watchtowers spaced at 20-40 m intervals (Le Page du Pratz 1975:375; Lafferty 1973:133-134; DePratter 1991:43).

Both types of fortifications, but especially palisades, seem just strong enough to cope with the exigencies of Mississippian warfare and the firepower of the time (see Lafferty 1973:136). No excessive constructions designed to convey power occur (cf. Trigger 1990:122). Indeed, Lafferty (1973:109-110) has suggested that fortifications were constructed only as needed. Some sites were fortified at certain times in their histories and not fortified at other times (Lafferty 1973:109).

In a recent discussion of Mississippian warfare, Karl Steinen (1992:134) suggests that small Mississippian towns were rarely fortified; however, the archaeological and documentary evidence suggests otherwise. Fortifications occurred at mound centers of all sizes from the smallest to the largest and sometimes at non-mound sites (such as the Snodgrass site in southeastern Missouri [Price 1978:218-219] and the Morris site in western Kentucky [Clay 1976:145]) as well.

A small amount of archaeological and documentary evidence exists regarding internal walls. Written accounts describe fences around temples or religious symbols

(Black 1967:280; Bourne 1922:28). Archaeological evidence bears this out. Four out of five mounds enclosed by fences contain burials or have been interpreted as temple platforms. Thus internal walls at Mississippian mound centers appear to have a social or symbolic function, segregating the burials of nobles and/or a religious structure from the view of the general public.

Summary

The survey described in this chapter has generated considerable data on the structure of Mississippian capitals. The survey results support some long-held views, refute others, and, in general, provide a number of new perspectives on the structure of Mississippian mound centers. The details of the survey have been presented in various sections of this chapter, but a summary of the results is presented below in a series of general statements. Exceptions to these statements exist, of course, and some statements might be altered with the acquisition of additional data. Nevertheless, the statements below accurately reflect the results of this survey.

- Most Mississippian mound centers exhibit an enclosed-central-space plan or some modification (73.7% of sites).
- Mounds at Mississippian capitals are frequently aligned to each other (at 84.6% of sites).
- Sites with larger numbers of mounds show alignments more frequently than sites with fewer numbers of mounds.
- Mound centers may be very compact or very spread out.
- Site size and the presence or absence of fortifications do not affect the compactness of a site. (Better data on fortifications might alter this conclusion.)

- Sites in central locations within the Mississippian world are frequently more compact than those at the edges of the Mississippian world.
- Mound centers are primarily oriented to topographical features, usually a river.
- Because many Southeastern rivers are aligned to the cardinal directions, many sites are also oriented to the cardinal points.
- The chief's house stands on the largest and tallest platform mound.
- The main mound usually stands in a peripheral location within the mound group.
- The main mound usually stands closer to water than other mounds.
- The favored positions for main mounds are at the north and west sides of the mound precinct.
- Sites where the main mound stands in a central location within the precinct usually have more mounds than sites with peripheral main mounds.
- The most common form for a main mound is a simple truncated pyramid.
- Complex multi-level mounds primarily occur at larger sites.
- Buildings standing on main mounds are larger than buildings not on mounds.
- Most buildings on main mounds are rectangular.
- Buildings on main mounds and buildings in non-mound contexts are similar in form and construction materials at any given site.
- Some Mississippian houses (perhaps particularly those of nobles) were brightly decorated with colorful painted designs.
- Mississippian storage facilities held primarily agricultural produce.
- Above-ground granaries were probably the main form of storage facility.

- Storage pits are infrequent at Mississippian sites, especially at mound centers, and are not found near chiefs' houses.
- Chiefs' storehouses were larger or more numerous than those of ordinary people.
- Mississippian temples stand on platform mounds at sites with two or more mounds.
- Temples generally stand on the second or third largest or tallest mounds.
- Temple mounds contain evidence of burials (particularly rich burials) while main mounds (sites of chiefs' houses) contain few or no burials.
- Temples stand near the plaza and chief's house.
- Temples or temple platforms are sometimes surrounded by a fence or palisade.
- Temples contain stone or wood statuary.
- Temple buildings are approximately the same size as chiefs' houses.
- Plazas occur at mound and non-mound Mississippian sites.
- More than one plaza may occur at mound centers.
- Plazas occupy prominent locations (i.e., center of the site, near chief's house) at mound centers.
- Architectural spaces created by the arrangement of mounds do not necessarily coincide with plazas.
- Fortifications occur at both large and small Mississippian sites and at non-mound sites as well as at mound centers.
- Fortifications at Mississippian mound centers include earthworks and wooden palisades.

- Earthworks (i.e., embankment and/or ditch) are less common at sites at the edges of the Mississippian world than at sites in central areas.
- Palisaded sites occur throughout the Mississippian world.
- Palisades were built of logs interlaced with cane and plastered with clay.
- Palisades commonly included bastions or watchtowers at 20-40 m intervals.

The commonalities and variations in the size and structure of Mississippian capitals have been presented in detail in Chapters 3 and 4. With this information as a foundation, let us turn in Chapter 5 to a closer examination of the characteristics of one particular Mississippian capital--the Lake Jackson site in northwestern Florida.

CHAPTER 5
THE LAKE JACKSON SITE: PORTRAIT OF A MISSISSIPPIAN CAPITAL VILLAGE

Having explored the size and structure characteristics of Mississippian mound centers in general, let us now turn to an examination of a single Mississippian capital, the Lake Jackson site, the capital of precolumbian Apalachee[1].

Apalachee occupies the land between the Aucilla and Ochlockonee rivers in the rolling hills of northwest Florida around present-day Tallahassee (see Figure 5-1). Apalachee is, in some respects, an atypical Mississippian chiefdom. For example, it is not confined to a river valley. Instead, it stretches across 65 km of nearly unbroken and very fertile agricultural soils. In addition, Apalachee stands at the edge of the Mississippian world, only 40 km from the Gulf of Mexico. Non-Mississippian Florida polities border Apalachee on the east.

The Lake Jackson site, the largest of nine presumably Mississippian mound centers in Apalachee, is also the largest mound site within a radius of 200 km. The site was occupied from about A.D. 1100 to 1500 (the Fort Walton period), apparently being abandoned just before Spanish explorers marched through the area in the early sixteenth century.

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1 "Apalachee" was the name of the chiefdom occupying the Tallahassee Hills in 1528 at first contact with Europeans, and there seems no reason to assume a different name prevailed in precolumbian times.

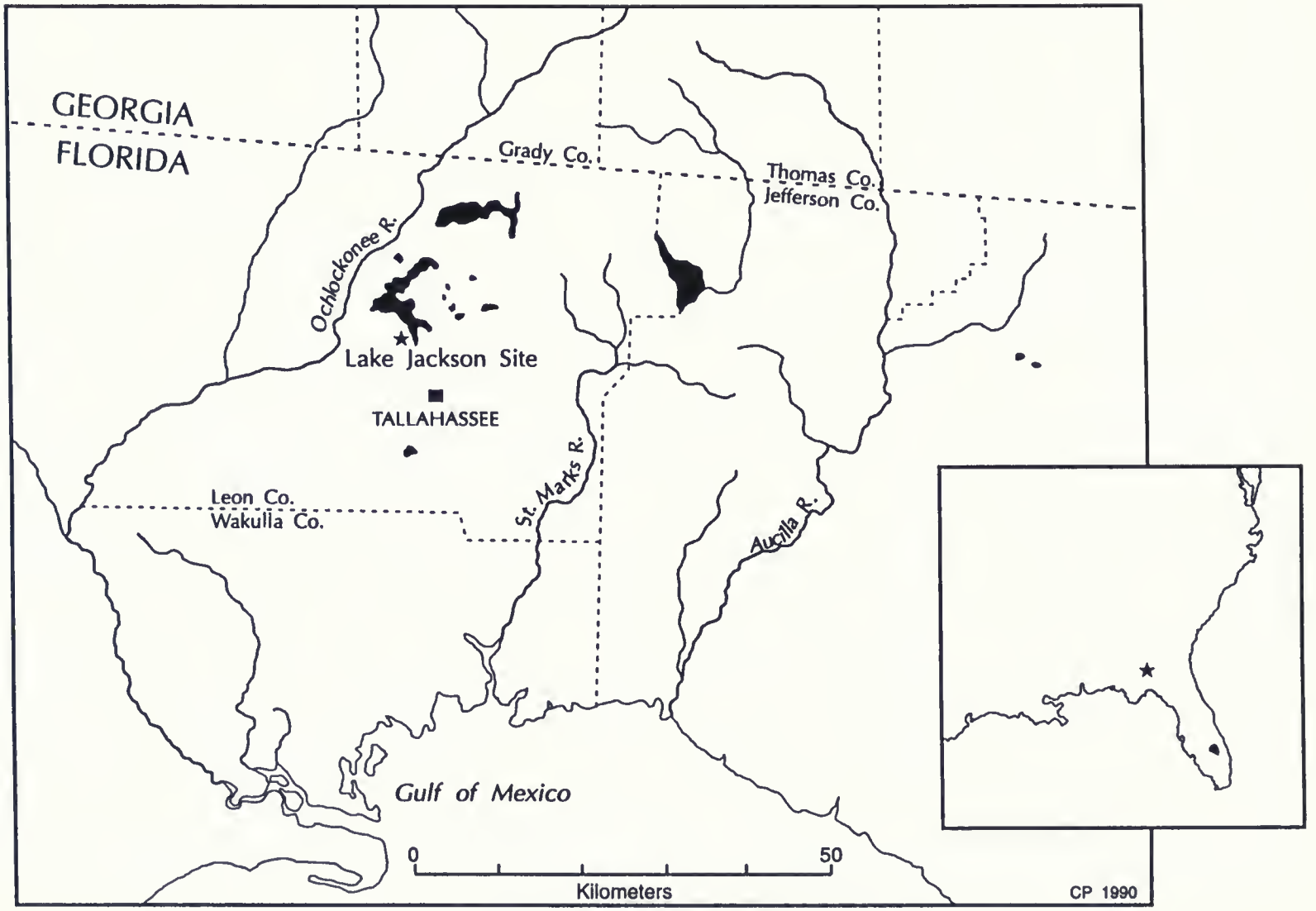

Figure 5-1. Precolumbian Apalachee and the Lake Jackson Site.

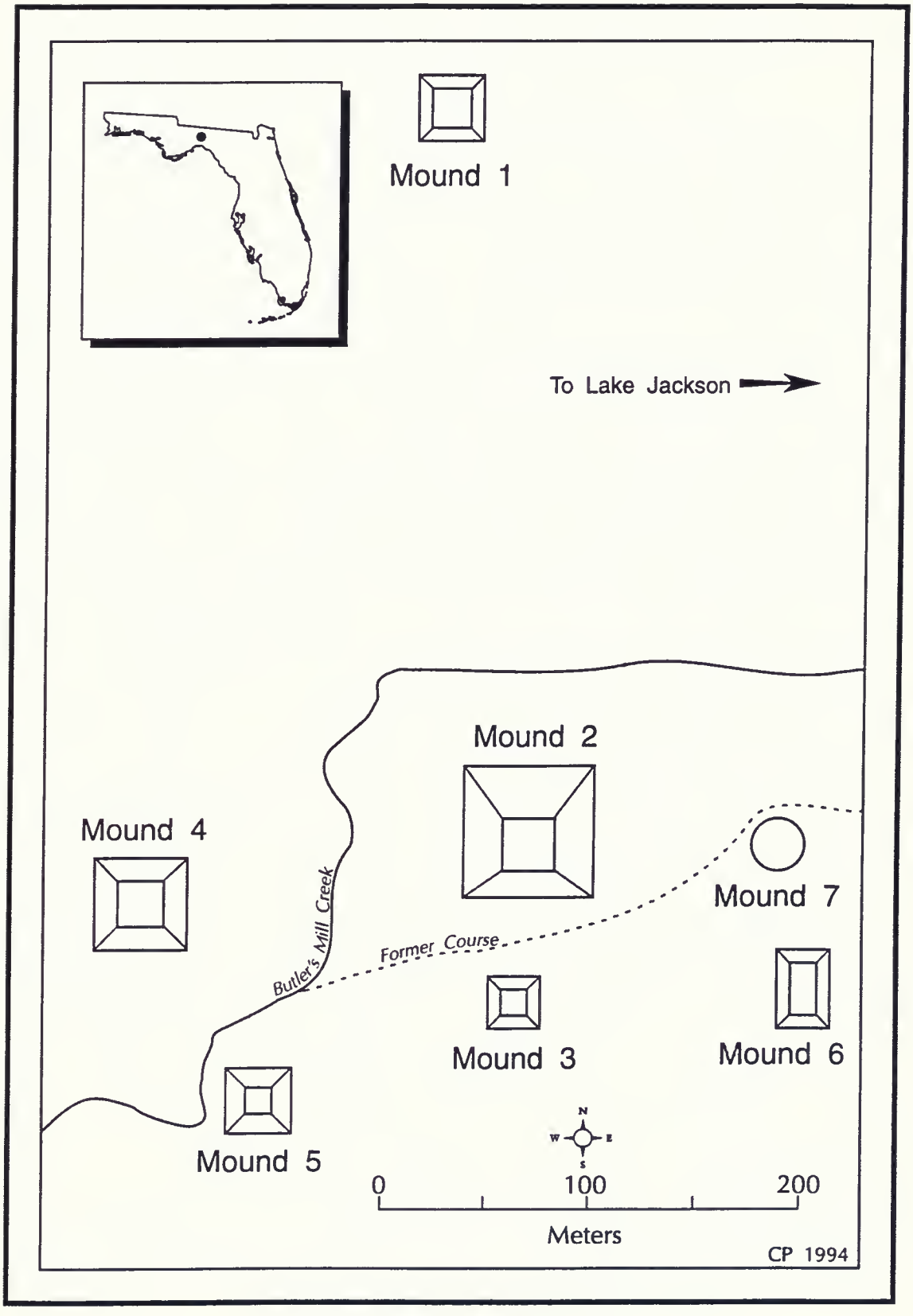

Figure 5-2. The Lake Jackson Site.

The first sections of this chapter describe what is presently known about Lake Jackson, including the history of the site and of archaeological investigations carried out there and a synthetic view of the site's growth and development. All this serves as background for the last section in which the size and structure of Lake Jackson are examined in light of the data on Mississippian mound centers presented in Chapters 3 and 4.

The Site and Its Setting

Site Description

The Lake Jackson site (8LE1) is a group of seven earthen mounds in western Leon County, Florida (Figures 5-1 and 5-2). Five large pyramidal, flat-topped mounds and a low, rounded mound form the main mound precinct. These are arranged on both sides of Butler's Mill Creek which flows into Lake Jackson. The seventh mound (Mound 1) is situated about 300-350 m north of the main precinct. The entire site, including mounds, living areas, and some large cleared spaces encompasses about 24 ha, with the mound precinct itself covering 19.0 ha. Mounds range in height from about 1 m to 11 m. Mound 2, the largest mound, covers an area of about half a hectare. Other features of the site include two apparently aboriginal borrow pits. One, southwest of Mound 4, is quite deep and periodically fills with water. The other is a gentle depression north of Mound 4.

Site Location

The Lake Jackson site, on the southwestern shore of Lake Jackson 7.25 km northwest of the center of Tallahassee (Figure 5-1), is in the eastern part of Section 10 and the extreme western part of Section 11 of Township 1 North, Range 1 West. The

section line between Sections 10 and 11 runs through the site; indeed, Mound 2 extends to the line.

Topography

The site lies in a broad flat plain at the foot of the 15 to 30 m bluffs of the lake basin. This plain is part of a minor physiographic zone known as the Lake Jackson Lowlands. The adjacent bluffs mark the edge of the Tallahassee Hills, a major physiographic region in Apalachee. Part of the Northern Highlands which stretch across north Florida, the Tallahassee Hills are characterized by gently rolling hills and ridges. Broad, flat-topped hills, usually about 50 m above sea level, generally run east and west and alternate with boggy stream valleys (Gano 1917:340).

Four large, shallow, flat-bottomed depressions (three now occupied by lakes) interrupt the rolling countryside of the Tallahassee Hills, forming lake basin lowlands. These lowlands occupy the courses of former streams and were created by the solution of the underlying limestone (Hendry and Sproul 1966:36-37; Sellards 1910). The Lake Jackson site stands in the largest of the four lake basin lowlands, a location offering the inhabitants of the site easy access to both the Tallahassee Hills and Lake Jackson Lowlands physiographic zones and both the Ochlockonee River Valley Lowlands 7.5 km to the west and the Gulf Coastal Lowlands 10 km to the south.

Water Bodies

An arm of Lake Jackson (Meginnis Arm) lies about 100 m directly east of the mound site. The main part of the lake can be reached easily from Mound 1 by walking either east or north. Butler's Mill Creek rises 30 m above the site on the ridge to the west and flows east through the site to Meginnis Arm. This creek is a

small one, only about 1.5 km long and less than 1 m wide. Its small floodplain shows the remnants of several old stream beds, indicating that the creek has not always flowed as it does now. In the late 1960s, the creek was diverted from its natural course to flow north into a drainage ditch which empties into Meginnis Arm (see Figure 5-2). The original course of the stream is uncertain, but given the configuration of the floodplain, it probably bisected the main mound precinct with Mounds 4, 2, and 7 to the north and Mounds 5, 3, and 6 to the south.

Although the location of the site would seem to make it prone to flooding, this is not the case. The site stands about 6 m above the level of the lake and rarely floods (Griffin 1950:99; Jones 1982:4, 24). U.S. Geological Survey flood-prone maps indicate that the highwater mark lies just east of Mound 2. Indeed, during the highest flood stage recorded in recent years (Hughes 1967:16), the water did not reach the mound precinct, although the outlying Mound 1 must have been inundated (Jones 1982:24).

Soils

Apalachee boasts large unbroken tracts of well-drained loamy soils (Hendry and Sproul 1966:24; Sanders 1981:8-11). These soils are among the best in north Florida and have supported fields and crops for about 1000 years with little sign of depletion. The region surrounding the Lake Jackson Lowlands is no exception. High-quality soils extend from the adjacent hills into the lake basin, with only a narrow band of poorly drained lesser-quality soils immediately adjacent to the lake. The Lake Jackson site thus sits at the eastern edge of a broad band of high-quality soils extending down from the ridgetop west of the site. Farming (aboriginal or modern) would be especially productive on the lands immediately north, south, and west of

the mound precinct. Only on the soils to the east of the site (toward the lake) would agriculture prove unprofitable.

History of the Site

The Nineteenth Century

The first written description of the Lake Jackson site is provided by A. M. Randolph who surveyed Township 1 North, Range 1 West in 1852. The area had been surveyed 27 years earlier by James and John Donelson, but they do not mention the mounds in their notes (Donelson and Donelson 1825). Randolph, however, noted "three Indian mounds" about halfway along the section line between Sections 10 and 11 (Randolph 1852:69). The mounds were owned at the time by Colonel Robert Butler, the first Surveyor General of territorial Florida. Butler arrived in Tallahassee in 1824 and by the 1830s had acquired about 365 ha on the southwestern shore of Lake Jackson west of Meginnis Arm (Groene 1971:43; Paisley 1968:5).

A map accompanying Randolph's survey provides a fairly clear picture of the area in the middle nineteenth century. The map shows much of Section 10 as open fields. In these fields there are three mounds with a "canal" cutting between two of them. The canal leads from a mill located toward the center of Section 10. The location of other watercourses differs from those described by the Donelsons, and it seems reasonable to suggest that Butler altered the landscape somewhat when he built the mill. Indeed, today there is clear physical evidence of land alterations west of the mounds along Butler's Mill Creek and near the ruins of the mill (Robert Morley, Lake Jackson Mounds State Archaeological Site manager, personal communication 1989).

The Early Twentieth Century

In the late nineteenth century, most of the Butler plantation (including the mound precinct) was sold to the Florida Planting Company which owned 400 ha (990 ac) in 1911 (Paisley 1968:67). In that year, the former Butler plantation was sold to the Florida Pecan Endowment Company (Paisley 1968:67). The FPEC planted pecan trees (20 to the acre), then sold 5-acre lots with the promise to manage the lots for the mostly absentee owners for 5 years. This investment scheme began collapsing in the 1920s when pecan production dropped, and many lots were forfeited to the state for delinquent taxes. By the early 1940s, all the former pecan endowment land had been sold (Paisley 1968:66-71).

The 1930s

In December, 1937, the first of several series of aerial photographic missions was flown over the former Apalachee territory[2]. At the Lake Jackson site, the remnants of regular rows of planted trees (presumably pecans) are clearly visible. Most of the mound precinct is open, but several of the mounds have trees on them. Butler's Mill Creek (Randolph's "canal" from the mill) runs between Mounds 2 and 3 in a fashion more or less similar to Randolph's 1852 depiction (1937 aerial photograph: AKV-34-45, 1:31,680, flown 12/13/37).

It was not until the end of the 1930s that researchers began to take a serious interest in the Lake Jackson site. The first reference to the site in a research

2 Air photographs of Sections 10 and 11 dating from 1937, 1954, 1960, 1966, and 1973 are available at the Map Library in the Marston Science Library at the University of Florida. Other series were flown in intervening years and may be available elsewhere.

publication had come in 1918 when Nels C. Nelson noted that he had visited (in 1917), "among other things of antiquarian interest, a group of artificial sand mounds on the shore of Lake Jackson near Tallahassee" (Nelson 1918:77). More than 20 years later, historian Mark Boyd described the site in an article on seventeenth century missions (Boyd 1939:272). His interest in the site lay in its location, which he thought fit the description of the mission of San Damian de Escambi (Boyd 1939:277).

The 1940s

Shortly after the reference by Boyd, archaeologists Gordon Willey and Richard Woodbury, then graduate students at Columbia University, came to the site. In the summer of 1940 they conducted a survey of the Florida Gulf coast for the National Park Service. They arrived at Lake Jackson in June and carried out limited excavations (Willey 1940:1). Theirs was the first of many archaeological investigations at the site. These investigations are described in the following section, but several of the early researchers are mentioned below for the insight they give into the condition of the site in past years.

Willey and Woodbury's brief visit to the mounds provides information regarding the condition of the site 50 years ago (Willey 1940:2, 3, 14-16; 1949:95). The summer of their visit a pecan grove lay north of the main mound precinct, between Mounds 1 (the northernmost) and 2. A dirt road led to the main part of the site from the northwest, ending a short distance west of Mound 4. The mounds were partly covered by oak and gum trees, and the areas between the mounds were planted in grass. A local informant told Willey and Woodbury that the part of the site east of the mound (in Section 11) had been used in recent years by a tenant farmer for grazing cattle. The area around the mounds showed signs of having been under

cultivation at some time (presumably from the pecan grove, but possibly also from Butler's plantation). Although the mounds appeared to be unharmed by cultivation, they had sustained some damage from vandals digging in them. Mounds 2, 4, 5, and 6 all had at least one hole in the top or side, while Mound 1 had five holes in several locations. Mounds 3 and 7 were undamaged. The site was divided into 18 lots, many of these (judging from their size and regular shape) undoubtedly the original 5-acre FPEC lots. The 18 lots were owned by eight individuals and the State of Florida.

John Griffin, who carried out investigations at the site in 1947, reported similar conditions (Griffin 1950). At the time of his visit much of the area around the mound precinct was still planted in pecan trees. Several of the mounds (2, 3, 5, and 6) and the banks of the creek were more heavily wooded, but Mound 4 had been partially cleared. Other parts of the site, including that in Section 11, were used as pasture for cattle (Griffin 1950:99).

The 1950s

By the 1950s, aerial photographs reveal additional alterations to the site. The 1954 series shows a house south of Mound 3, with a small pond to the northwest of the house (1954 aerial photograph: AKV-4N-64, 1:20,000, flown 12/20/54). This pond may have been created by damming Butler's Mill Creek; the pond seems to be near the course of the stream. Generally, the site was more wooded than in 1937, and the mounds themselves are covered in trees.

The 1960s

On January 24, 1965 an article appeared in the *Tallahassee Democrat* documenting a proposal by the State of Florida to purchase 80 ac (32 ha) including the

main mound precinct and surrounding areas (Boyles 1965). A map accompanying this article and an aerial photograph from 1966 (AKV-7HH-194, 1:20,000, flown 11/25/66) provide additional information about the condition of the site in the middle 1960s. The map shows the small pond that can be seen on the 1954 aerial photograph west of Mound 3. Butler's Mill Creek is shown as diverted to flow from this pond to a larger one just to the north (between Mound 2 and 4). The stream also flows eastward out of the small pond, running between Mounds 2 and 3, then curving to the northeast to run just north of Mound 7. A third pond, smaller than the other two can be seen immediately northeast of Mound 2. The 1966 aerial photograph confirms the existence of the pond between Mounds 2 and 4. This pond does not appear on the 1960 aerial photograph (AKV-9AA-96, 1:20,000, flown 3/22/60), so its construction can be placed between March 22, 1960 and January 24, 1965. The pond west of Mound 3 also appears on the 1966 photograph (although reduced in size) but is gone by 1973 (1973 aerial photograph: A 40 12073 173-95, 1:40,000, flown 12/15/73). The third small pond shown in the *Democrat* map does not appear on any aerials, except possibly on the 1966 photograph. It may either have been a short-term or intermittent pond created by the exceptionally high rainfall in 1964 (Hughes 1967:5) or a pond proposed by the park planners.

In May 1966, the State of Florida purchased 11.5 ac (4.7 ha) (Robert Morley, personal communication 1989). This was far smaller than the original plans and included only part of the main mound precinct. The tract was T-shaped and encompassed about three-quarters of Mound 2, all of Mound 4, and half of Mound 5. The property was designated the Lake Jackson Mounds State Archaeological Site and

managed by the Florida Department of Natural Resources (DNR). The rest of the site remained in private hands.

In the late 1960s and early 1970s, DNR made several improvements to the park. The first alteration involved the construction of a drainage ditch along the north boundary of the property (this is about 100 m north of Mounds 2 and 4). This ditch allowed water from the pond between the mounds to drain into Meginnis Arm. Although not clear from the aerial photographs, this construction probably resulted in the effective diversion of Butler's Mill Creek, which no longer (in 1994) runs in the course shown on earlier maps and air photographs. In the early 1970s, three buildings were constructed in the park. These included restrooms north of Mound 4 and a house and workshop on the bluff west of the mounds. A parking lot northwest of Mound 4 was also built at this time. Archaeological investigations carried out before these improvements are described in the next section.

The 1970s

In January 1974, the state bought approximately 70 ac (28 ha) adjacent to and west of the earlier purchase (Robert Morley, personal communication 1989). This acreage encompassed an occupation area related to the main mound group, at least two outlying aboriginal farmsteads, and the remains of Colonel Butler's nineteenth century mill on Butler's Mill Creek. Unfortunately, the state did not acquire any more of the mound precinct itself. The purchase brought the total park property up to almost 82 ac (33 ha) (Robert Morley, personal communication 1989). At this time, and up to the present, virtually all the site not owned by the state was owned by various members of the Crowder family (Rockford Map Publishers 1974; Florida Plats 1986; Leon County Property Appraiser's Office 1989).

Despite being listed in the National Register of Historic Places in May 1971, alterations to the site continued in the 1970s; several of these resulted in the loss of irreplaceable archaeological data. In the early 1970s, the Crowder family, which owned four and a half of the mounds, graded away the east half of Mound 5 and the top of Mound 6 (Jones 1982:5). In 1975 and 1976, Sam Crowder removed Mound 3 in order to expand a workshop next to the mound. Calvin Jones of the Bureau of Historic Sites and Properties (BHSP) was allowed to conduct emergency archaeological salvage excavations during the removal of the mound (Jones 1982; 1994).

Another alteration occurred on park property. The artificial pond between Mounds 2 and 4 was refilled sometime between 1976 and 1979 (Robert Morley, personal communication 1989). Butler's Mill Creek, which had flowed into the pond and then to a ditch along the northern park boundary, continued in its diverted course to flow north through the park then east to Meginnis Arm rather than directly east between Mounds 2 and 3 as it had in earlier times (Randolph 1852; Willey 1940).

The 1980s

Alterations to the site slowed somewhat in the 1980s, although the general area remained endangered by encroaching development. A small housing development was built just north of the site and may have resulted in the loss of some data. One house constructed south of this development may have impinged on outlying occupation areas (John Scarry, personal communication 1989). A trailer park south of the main mound precinct also compromised the integrity of the site. In the process of preparing the area near Mound 1 for the construction of a house, a landowner

accidentally graded away the top of the mound (Robert Morley, personal communication 1989).

The Lake Jackson Site Today

It is unfortunate that the history of the Lake Jackson site has so frequently been one of destruction. Much harm has been inflicted on the site in the 50 years since the first archaeologists visited it. Despite this, the sheer size of the site means that there are many areas still intact. Even those parts subjected to disruption in the past may, with care, yield valuable information when studied.

This situation may not last long, however. Today, in 1994, only the five to six hectares owned by the state are protected. Most of the rest of the estimated 24 ha of the site stands in constant danger of damage or destruction from development.

Archaeological Investigations at Lake Jackson

Gordon Willey and Richard Woodbury carried out the first archaeological investigations at the Lake Jackson site in 1940. In the intervening 54 years, many archaeologists have studied the site, but for various logistical reasons little has been published on those investigations.

In this section, a summary of archaeological work at Lake Jackson is presented. The summary includes investigations for which reports have been published (i.e., Willey 1949; Griffin 1950; Jones 1982, 1994), unreported investigations, and investigations which I conducted as part of my doctoral research. Collections and field notes for many of the unreported projects are housed at the Division of Historical Resources, Bureau of Archaeological Research (BAR). James J. Miller and John Scarry kindly made data from these projects available to me for study. Artifacts

and notes from my investigations also are curated at the BAR. John Griffin's collection and notes are curated at the Florida Museum of Natural History; access to this collection was provided through the courtesy of Jerald T. Milanich and the Museum's Department of Anthropology.

As a result of this access, I was able to examine in detail collections from several different parts of the Lake Jackson site. Classification of the pottery from these collections enabled me to develop a ceramic chronology: the Lake Jackson I phase (ca. A.D. 1050/1100-1150); the Lake Jackson II phase (further subdivided into Early [ca. A.D. 1150-1250] and Late [ca. A.D. 1250-1400]); and the Lake Jackson III phase (ca. A.D. 1400-1500). This chronology is summarized in Table 5-1 and is described in greater detail in the section following this one.

The investigations described below are presented in the order in which they were carried out. Figure 5-3 shows the locations of the investigations within the site.

Test Excavations North and South of Mound 2, 1940

As noted earlier, Gordon Willey and Richard Woodbury were the first archaeologists to work at Lake Jackson (Willey 1940, 1949). In June, 1940, Willey and Woodbury dug two 3 by 3 m units on either side of Mound 2.

The southern unit (about 20 m south of the mound) yielded very few artifacts and little evidence of occupation. Willey speculated that the creek which ran nearby (Butler's Mill Creek) had washed away any midden that might have existed there (Willey 1949:98).

The northern unit (about 60 m north of the mound) uncovered cultural deposits to a depth of about 40 or 50 cm and a moderate collection of sherds classified by Willey as belonging to the Fort Walton period (the Mississippian period in

Table 5-1. Ceramic Chronology for the Lake Jackson Site.

Site Phase	Ceramic Assemblage Characteristics	Suggested Dates
Lake Jackson I	Wakulla Check Stamped Fort Walton Incised mica inclusions unaltered rim forms	A.D. 1050 or 1100 to 1150
Early Lake Jackson II	Wakulla Check Stamped Carrabelle Punctated, *var. Meginnis* cob-marked pottery Fort Walton Incised Cool Branch Incised Marsh Island Incised Lake Jackson Incised red-filmed pottery unaltered or folded rims loop and strap handles occasional mica inclusions	A.D. 1150 to 1250
Late Lake Jackson II	Fort Walton Incised Cool Branch Incised Marsh Island Incised Lake Jackson Incised red-filmed pottery altered rim forms (notched, ticked, scalloped) loop and strap handles lugs occasional mica inclusions	A.D. 1250 to 1400
Lake Jackson III	Fort Walton Incised (some varieties no longer occur) Lake Jackson Incised red-filmed pottery altered rim forms (notched, ticked, scalloped, fluted)	A.D. 1400 to 1500

Note: Dates attached to phases are based on a limited number of associated radiocarbon dates and on cross-dating of some artifact types with those from other areas. The dates of phases should be regarded as tentative and open to revision.

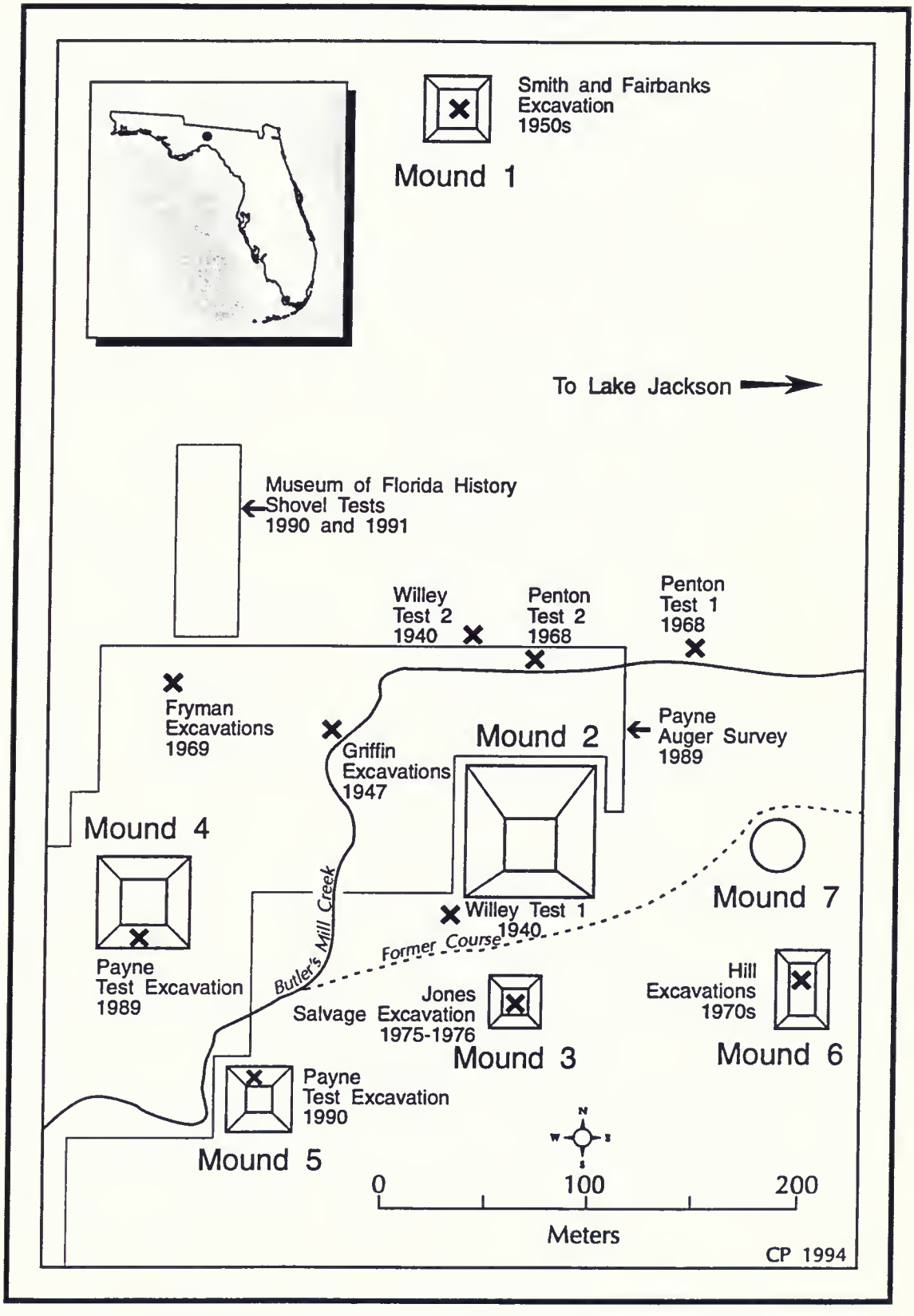

Figure 5-3. The Lake Jackson Site with Locations of Selected Archaeological Projects Indicated.

northwest Florida). Nearly ten years later, Willey reported the results of the excavations at Lake Jackson in his massive compendium of data on the archaeology of Florida's Gulf coast (Willey 1949:95-99).

Excavations between Mounds 2 and 4, 1947

A few years after Willey and Woodbury's visit, John Griffin excavated a fairly large area west of Mound 2 (Griffin 1950). Griffin placed 87 5-ft-square units between Mounds 2 and 4. In this area, he found evidence of occupation averaging 45 cm deep and including many overlapping pits, postholes, and other features. A series of tests south of the main excavations, however, turned up very little. The contrast between the two areas, along with the barrenness of Willey's unit south of Mound 2, led Griffin to speculate that the area between Mounds 2 and 4 and between Mounds 2 and 3 represented a cleared plaza (Griffin 1950:103). Griffin classified the 8,000 sherds recovered as belonging primarily to the Fort Walton period. Based on my later examination of Griffin's collection, it appears that the area between Mounds 2 and 4 was used continuously throughout Lake Jackson's 400-500 years of occupation.

Griffin also cleaned and profiled a vandal's cut on the south side of Mound 2 (see Figure 5-4). Griffin's (1950:99-100) description of the profile provides the first glimpse into the interior of a mound at Lake Jackson. The profile revealed two apparent building episodes (one of black muck and one of varying soil types and colors), each capped with a layer of clay. These building levels represented only a small part of the mound's history; the profile was only 2 m deep, less than a fifth of the total height of the mound (11 m).

Just before the fieldwork ended, Griffin (1950:101) cleared the humus off Mound 4 to look for structures on the summit. Seven possible postholes turned up

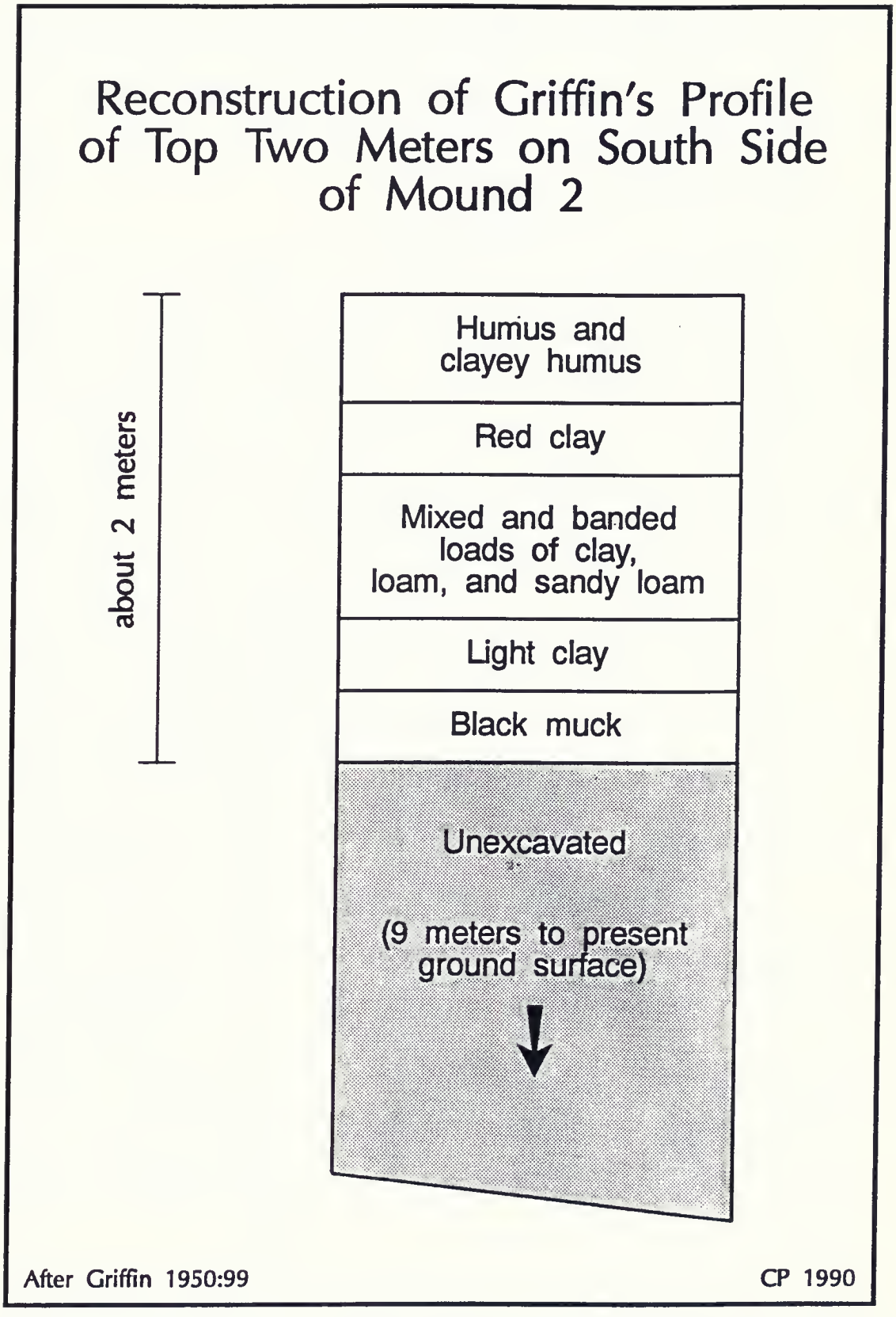
Reconstruction of Griffin's Profile of Top Two Meters on South Side of Mound 2
about 2 meters
Humus and clayey humus
Red clay
Mixed and banded loads of clay, loam, and sandy loam
Light clay
Black muck
Unexcavated
(9 meters to present ground surface)
After Griffin 1950:99
CP 1990

Figure 5-4. Profile of Top Two Meters of Mound 2 Reconstructed from John Griffin's (1950:99-100) Description.

just under the humus layer, but because time was short, the operation had to be abandoned without any deeper excavations.

Excavations in Mound 1

In the middle to late 1950s Hale G. Smith and Charles H. Fairbanks of the Department of Anthropology at Florida State University undertook a small excavation in Mound 1 (the northernmost mound). Unfortunately, little documentation of this operation remains today. One picture of the excavation (from a distance) exists, along with a very general list of items recovered. Despite the assistance of staff and faculty at the Bureau of Archaeological Research, Florida State University, and the Florida Museum of Natural History, I have been unable to locate either field notes or an artifact collection from this excavation.

Investigations North and East of Mound 2, 1968

In 1968, DNR proposed to build a drainage ditch along the north boundary of the park property. Before construction, Daniel Penton of the BHSP excavated two two-meter-square units along the route of the ditch, one northeast of Mound 2 in the easement along the neighboring landowner's property, the other 72 meters west of the first on park property (Penton 1968).

Test Pit 1 yielded a moderate number of artifacts but little in the way of features. Three possible postholes appeared in Level 3 (between 30 and 40 cm) just before the cultural deposit stopped at about 40 cm.

Test Pit 2 (north of Mound 2) proved the richer of the two units. Penton found numerous features, much darker soil, and nearly three times more artifacts than in Test Pit 1. Pits, postholes, and large areas of burned clay at varying depths

indicated the presence of several overlapping structures and associated features. This evidence of occupation extended to about 50 cm below the surface. My later analysis of the artifacts from these units indicates that the two areas were occupied during Lake Jackson III times (probably around A.D. 1400 to 1500).

Penton also made a surface collection east of Mound 2. Analysis of these artifacts indicated that this area was occupied during the late Lake Jackson II and possibly Lake Jackson III phases (A.D. 1250 to 1500).

Excavations North of Mound 4, 1969

In 1969, DNR requested archaeological excavations at three proposed building construction sites in the park. In December of that year, Frank Fryman (also of the BHSP) excavated 28 square meters in a proposed restroom location north of Mound 4 and 14 square meters on the nearby hilltop where a residence and shop were to be constructed. He also placed shovel tests in the parking lot area northwest of Mound 4 (Fryman 1969, n.d.). The buildings and parking lot were built in the early 1970s.

The restroom location was only about 100 m northwest of the rich and complex deposits uncovered by Griffin in 1947, and Fryman expected that it would be archaeologically productive (Fryman n.d.:2). Part of it was. The eastern side of the excavation revealed cultural deposits to a depth of 30 cm and various features, including a portion of a wall trench with postholes 15-20 cm in diameter. When I analyzed the excavated material in the early 1990s, I found Fort Walton artifacts typical of the Lake Jackson I and II phases (around A.D. 1100 to 1400). In the western side of the excavation, however, much less evidence of occupation appeared, and there were no features. These findings prompted Fryman to recommend that the restroom site be moved at least 10 m west. This was a wise decision. The results of

my auger survey 20 years later indicate that Fryman had placed his units right at the western edge of the site. Shifting the building location 10 m west probably prevented much damage to the site. Fryman's other tests, at the top of the hill and where the parking lot is now (west of Mound 4), produced no features and little aboriginal material.

Salvage Excavation of Mound 3, 1975-1976

The destruction of Mound 3 in 1975 and 1976 resulted, ironically, in the acquisition of important information about the people who built the mounds and about Lake Jackson's ties to the rest of the Mississippian world (Jones 1982, 1994). Mound 3, standing just south of the main mound (Mound 2), was 4.9 m tall in 1975, a somewhat taller-than-average Mississippian platform mound. When Calvin Jones of the BHSP learned of the mound's impending destruction, he persuaded the landowner to allow salvage excavations. In the face of severe constraints set by the landowner, Jones and his small crew put forth a heroic effort and, though unable to rescue everything, managed to save burials, grave goods, and structural data that otherwise would have been lost forever.

Jones (1982:8-9, 20) found an occupation area below the mound dating to around A.D. 1240 $\pm$ 90. On the earliest floor lay a clump of charred corn, testifying to the presence of cultivated crops at Lake Jackson. Overlying this were 12 structural floors separated by episodes of fill, consisting of lenses of various types of soils. On some of these floors, rectangular buildings had been constructed. A carbon sample from the top of the mound yielded a date of A.D. 1476 $\pm$ 85. The radiocarbon dates from Mound 3 place it in the middle and late stages of Lake Jackson's occupation (A.D. 1250 to 1500).

The most spectacular discoveries in Mound 3 were 24 burials and their accompanying grave goods. This extensive collection of Mississippian copper, shell, pearl, and other elaborate and beautiful items is one of the most significant known. Not only are the contents of Mound 3 intrinsically interesting, but studies of their nature and distribution within the mound have yielded information on political structure (Scarry 1990, 1992; Payne and Scarry 1990; Jones 1994), social structure (Jones 1982, 1994; Payne and Scarry 1990; Scarry 1992), health (Storey 1991), technological capabilities (Leader 1988, 1991), and exchange networks (Jones 1982; Payne and Scarry 1993; Scarry 1993).

Excavations in Mound 6, 1970s

Less spectacular but still informative were excavations in Mound 6 (east of Mound 3) by Louis Hill, a resident of Tallahassee (Hill n.d.). He excavated ten 2 x 2 m units in the northern part of the mound. Hill donated his artifact collection and field notes to the Bureau of Archaeological Research in the 1980s (John Scarry, personal communication 1989).

Like Mound 3, Mound 6 was built atop an earlier occupation area, but unlike Mound 3, the earlier occupation had been covered with a layer of light-colored sand before mound construction. Hill found several possible living floors in the mound but no burials. The artifacts from this excavation are characteristic of the Late Lake Jackson II phase (around A.D. 1250 to 1400).

Small-scale Tests in Mound 2, 1986 and 1989

Mound 2, the largest of the seven mounds, is almost entirely owned by the State of Florida. Possibly because it has been protected by the state for nearly 25

years, possibly because of its large size, Mound 2 is in excellent condition. When necessary park maintenance may impact on the archaeological resources in the part of the site managed by DNR, an archaeologist is sent to monitor the operation. Two such operations occurred in the 1980s. These included the repositioning of wooden stairs to the summit (monitored by Henry Baker of the BAR) and the placement of a sign near the top of the mound (which I monitored).

Both operations provided a small amount of data about the last construction levels of the mound. The 24 small holes dug for the stairs on the north side of the mound showed that an orange-brown clay cap still exists on that slope. The hole dug for placement of the sign on the northwest side of the mound showed the same thing and that underneath this final cap is a zone of varying soil types and colors. Both tests essentially corroborate the top portion of Griffin's profile of the south slope. Artifacts from these investigations suggest that the final construction stages date to no earlier than the Lake Jackson III phase (A.D. 1400 to 1500).

Broad-scale Auger Survey, 1989

Other archaeological operations during these years were more extensive. In January and early February of 1989, with the help of Rochelle Marrinan and the Florida State University Department of Anthropology Field School, and in cooperation with DNR, I conducted an auger survey of about half of the main mound precinct for the Florida Museum of Natural History (Payne 1989). This survey and later test excavations in Mounds 4 and 5 were carried out under the auspices of an archaeological research permit issued by the Bureau of Archaeological Research.

The survey area encompassed the north and west sides of the main mound precinct, about 3 ha in an L-shape around Mounds 2, 4, and 5 (Figure 5-5). We dug

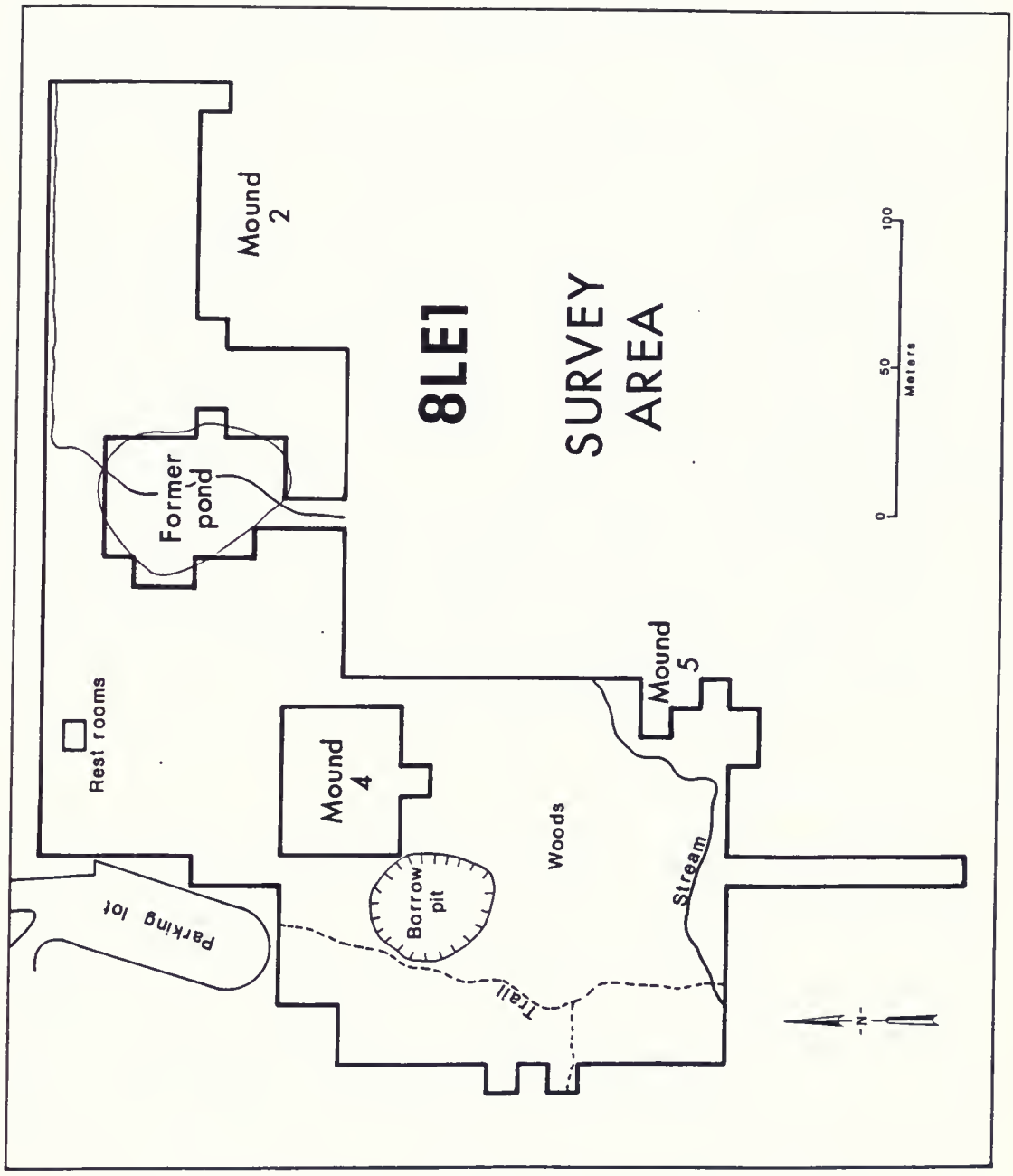

Figure 5-5. Extent of 1989 Auger Survey.

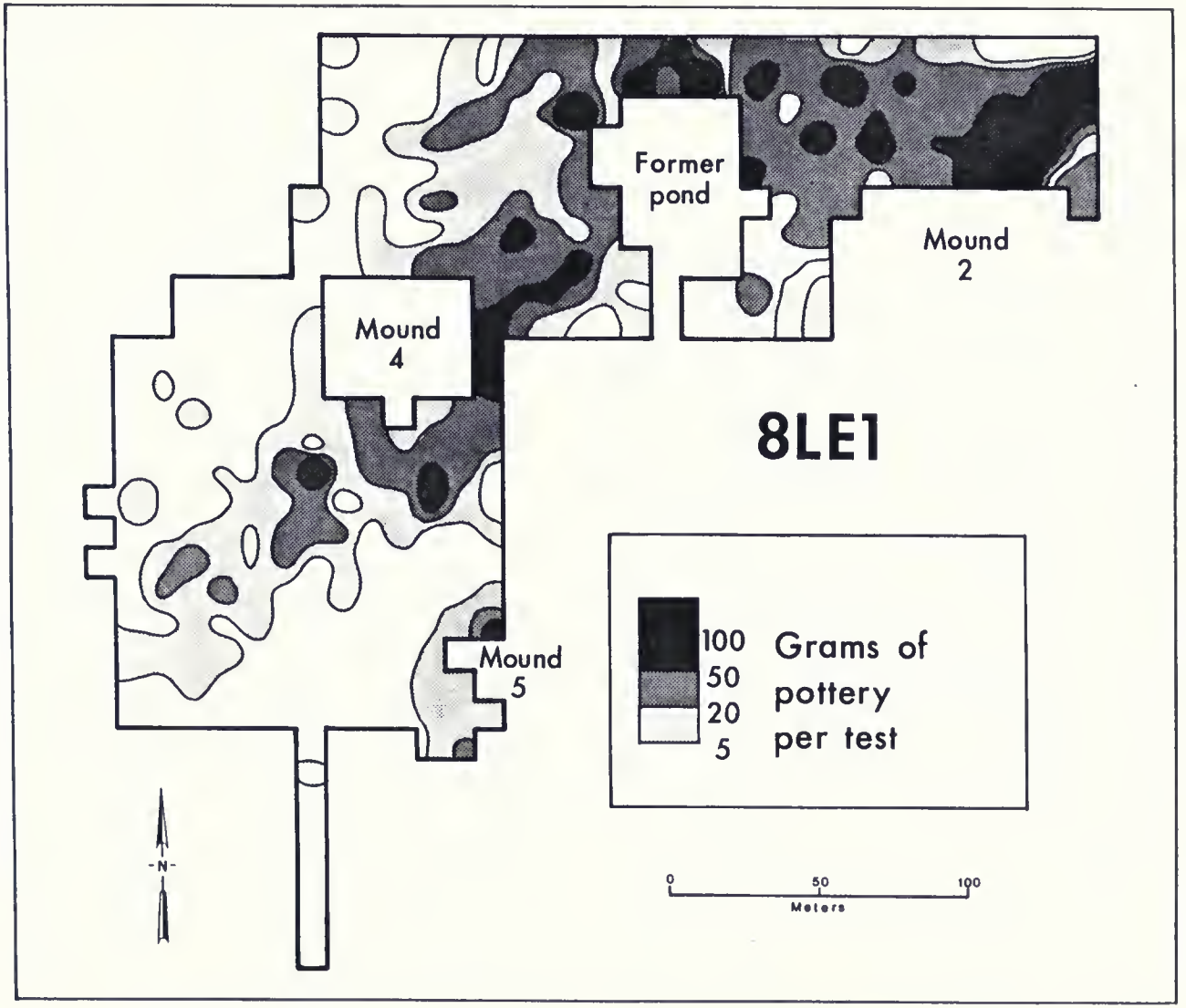

Figure 5-6. Distribution of Pottery Recovered from Auger Tests.

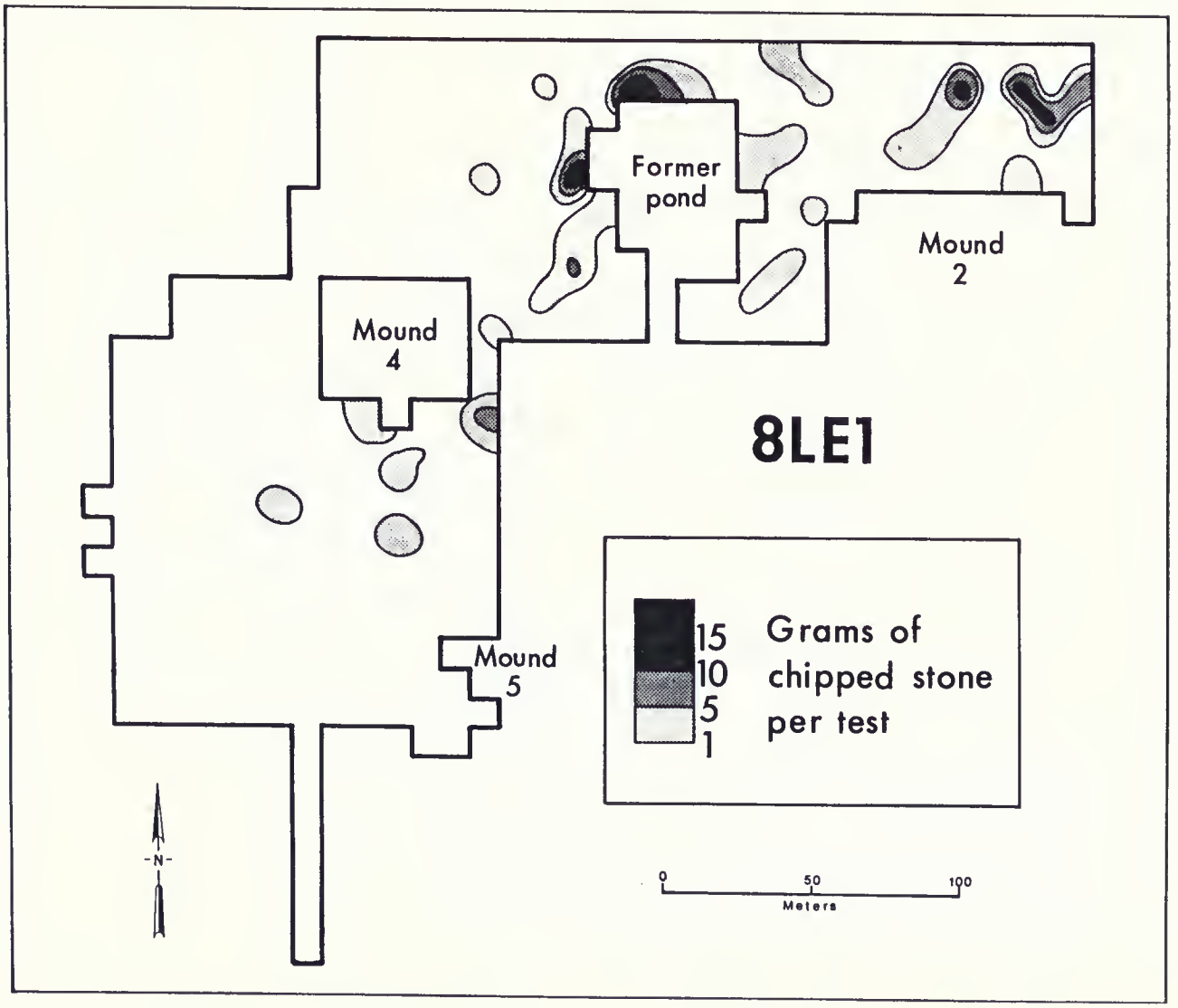

Figure 5-7. Distribution of Chipped Stone Recovered from Auger Tests.

377 auger holes (20 cm in diameter and generally about a meter deep) at intervals of 10 m.

The survey showed that the heaviest occupation occurred in the immediate vicinities of Mounds 2 and 4 and in the area just north of these (see Figures 5-6 and 5-7). Artifact densities dropped off and cultural deposits became shallower to the northwest and west of Mound 4 and southwest of Mound 5; the small floodplain of Butler's Mill Creek prevented much occupation between Mounds 4 and 5. Shallow midden deposits and low artifact density in the area between Mounds 2 and 4 supported Griffin's view that a plaza existed between the mounds. Artifacts recovered during the auger survey span all phases of occupation at the site. In addition, one blue glass bead from the seventeenth century was found at the bottom of a borrow pit just southwest of Mound 4.

Test Excavation in Mound 4, 1989

In April, 1989, I returned to the site to excavate (with the help of DNR and volunteers) a 2-meter-square stratigraphic test unit in the south flank of Mound 4 (Payne 1989). This unit was opened in two stages, beginning with a 1 m by 2 m unit, excavated in arbitrary levels. The profile of this unit was then used to excavate the adjacent unit by natural levels.

As with all the other mounds excavated at Lake Jackson to date, evidence of occupation lay beneath the first stages of mound construction (Figure 5-8). Above this zone, a thin layer of light-colored sandy clay had apparently been laid down, perhaps in preparation for the construction of the mound, for above this was 60 cm of varied soil lenses. This apparent basket-loaded fill was topped by what seemed to be the

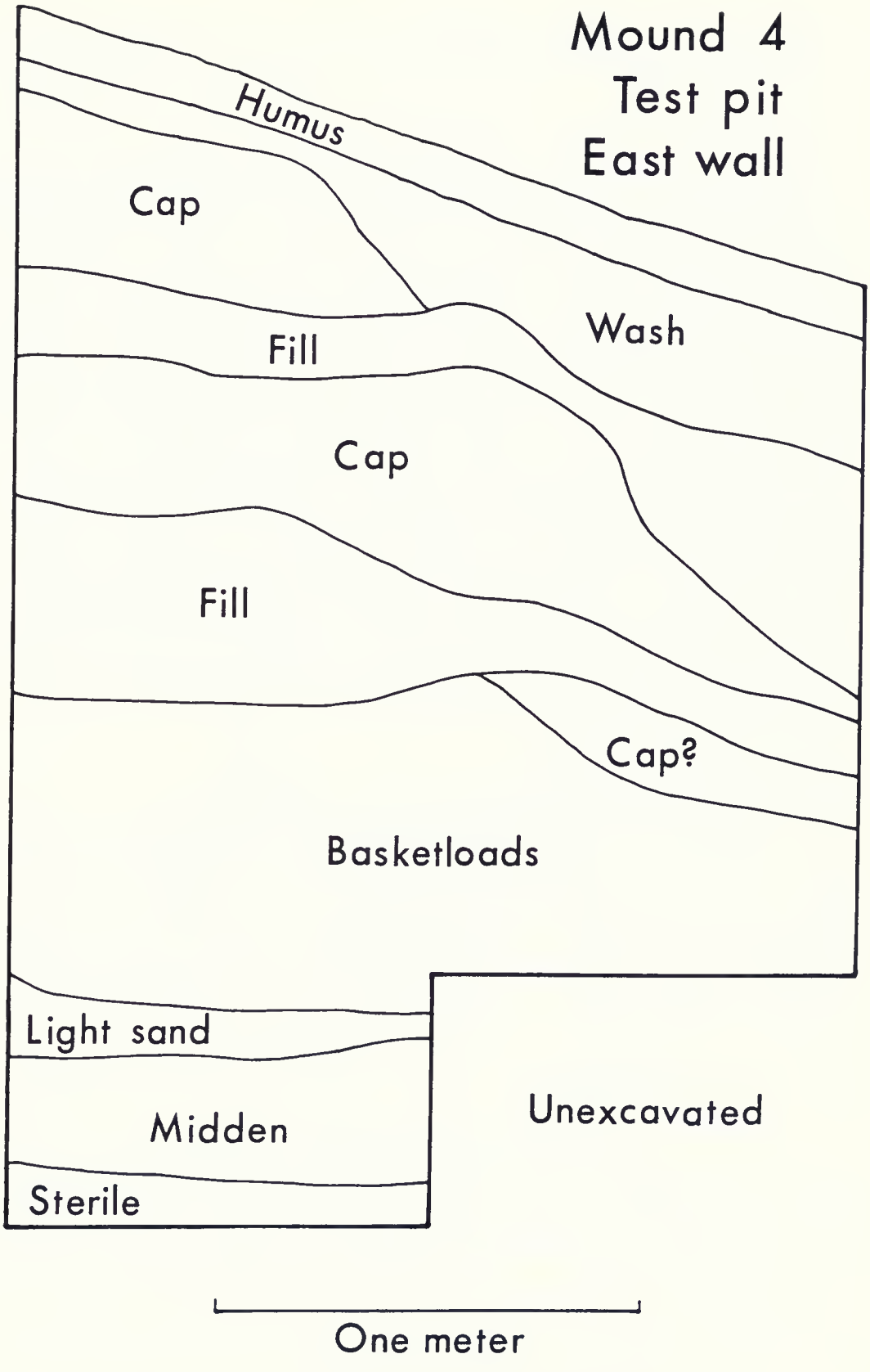

Figure 5-8. East Profile of Test Unit in Mound 4.

remnants of an orange-brown sandy clay cap. An ash layer in the northwest corner of the unit indicated that the top of this first mound may have been used as a living surface. Two more episodes of alternating gray-brown fill and orange-brown sandy clay caps followed the basket loading. Artifacts from the submound occupation zone are similar to those from below Mound 3, suggesting a date of A.D. 1200-1300. The mound itself contained artifacts indicating that it was built no earlier than the Late Lake Jackson II phase (around A.D. 1250 to 1400).

Test Excavation in Mound 5, 1990

The following year, I opened another stratigraphic unit on the north slope of Mound 5. This excavation was made possible by the Florida Museum of Natural History with assistance from DNR. Due to time limitations, the Mound 5 unit was smaller than the one in Mound 4--only 1 m by 2 m.

At the bottom of the unit lay a dark charcoal-rich occupation layer. Charcoal from this layer yielded two radiocarbon dates: 670 B.P. $\pm$ 90 (A.D. 1280 $\pm$ 90) (Beta-44592) and 910 B.P. $\pm$ 110 (A.D. 1040 $\pm$ 110) (Beta-47654) (both dates uncalibrated). The first of these is probably too late and should be rejected.

There are three reasons to doubt the accuracy of this date. First, Wakulla Check Stamped, a pottery type characteristic of the preceding Weeden Island II period (A.D. 750 to 1000 or 1200 [Milanich 1994:162]) occurs in this level along with a few Mississippian pottery types (e.g., Fort Walton Incised). Second, artifacts from this layer are generally comparable to those from early Fort Walton Cayson phase components on the Apalachicola River (Scarry 1984). Ten radiocarbon dates were available for the Cayson phase (Scarry 1990:236). These range from 1110 B.P. $\pm$ 70 (A.D. 840 $\pm$ 70) to 760 B.P. $\pm$ 50 (A.D. 1190 $\pm$ 50), with an average date of 923 B.P.

(A.D. 1027) and a median date of 920 B.P. (A.D. 1030). The A.D. 1280 date from the artifactually similar component below Mound 5 is incompatible with the Cayson phase dates. Moreover, this date is similar to one from below Mound 3 at Lake Jackson, but the absence of Wakulla Check Stamped (Jones 1982:41) from that assemblage places it later than the Mound 5 submound assemblage. And, finally, it is possible that the carbon sample yielding the A.D. 1280 date was a piece of root wood (Lee A. Newsom, personal communication 1991).

The date (A.D. 1040) of the second carbon sample (clearly not a piece of root wood) corresponds well to those from the Cayson phase, and, in fact, falls very near the median date. This date is accepted here as an accurate indicator of the date of the premound occupation.

Mound construction stages were not as clear for Mound 5 as they were for Mound 4, but basket loads of earth were apparent as were clay mantles. There appear to have been at least two construction episodes, with the first occurring directly above the submound occupation zone (with no intervening light-colored sand layer). Artifacts in and around the mound suggest that the mound may have gone out of use by the late Lake Jackson II phase (A.D. 1250-1400).

Other Small Investigations

In addition to the Mound 5 test, 1990 saw several other archaeological investigations. Calvin Jones and Robert Morley conducted an auger survey along the boundary of the park in response to the need for a fence surrounding the park. To facilitate fence construction, holes were placed approximately 3 m apart; over 150 holes were excavated (Calvin Jones and Robert Morley, personal communication 1990). Preliminary survey results suggest the presence of one or two farmstead sites

on the hill southwest of Mound 5. In the spring, Morley built a footbridge over Butler's Mill Creek between Mounds 2 and 4; Calvin Jones monitored the construction. About the same time, Jones also excavated several shovel tests north of the park (Calvin Jones, personal communication 1990).

During the summers of 1990 and 1991, the Museum of Florida History conducted archaeological summer camps in the vicinity of Jones's tests (Terzis and Smith 1990; Lozowski 1991). Archaeologists and summer camp participants dug 22 shovel tests in an area about 20 m wide that extended 85 m north of the fence marking the park boundary. The distribution of aboriginal pottery was highest in the units closest to the fence. Numbers of sherds per unit dropped off to the north and west, with several of the northernmost and westernmost units containing no cultural materials. One unit 5 m north of the fence yielded two San Luis Blue on White majolica sherds, perhaps indicating the presence of a seventeenth century ranch or mission nearby (Terzis and Smith 1990; Calvin Jones, personal communication 1990).

The Structure and Development of the Lake Jackson Site

Despite all the archaeological investigations at Lake Jackson, only a very general picture of the chronology for the site existed in the late 1980s. In 1984, John Scarry had established a partial chronology for the region (Scarry 1984). He defined a Mississippian Fort Walton phase, called the Lake Jackson phase, dating from about A.D. 1100 or 1200 to 1500 (see Figure 5-9). Scarry and Marion Smith later subdivided this into early and late parts (Smith and Scarry 1988). However, both schemes were too broad to be of use in studying the development of the Lake Jackson site. For this, a more detailed chronology was necessary. Based on data from my own

LAKE JACKSON CHRONOLOGY 1000-1500

<table>
<tr><th>Date</th><th>Scarry</th><th>Smith & Scarry</th><th>Payne</th></tr>
<tr><td>1500</td><td rowspan="10">Lake Jackson</td><td rowspan="2">Late Lake Jackson</td><td rowspan="2">Lake Jackson III</td></tr>
<tr><td>1450</td></tr>
<tr><td>1400</td><td rowspan="6">Early Lake Jackson</td><td rowspan="3">Late Lake Jackson II</td></tr>
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Figure 5-9. Lake Jackson Phase Chronologies.

investigations and many of the earlier ones, I have divided Scarry's long Lake Jackson phase into three new phases: Lake Jackson I, II, and III, with Lake Jackson II being further broken down into early and late subphases (see Figure 5-9 and Table 5-1). The dates attached to the phases are estimates based on the few radiocarbon dates from the site and on cross-dating of some artifact types with those from other areas. The dates are thus tentative and subject to revision upon acquisition of additional data.

Ceramic Chronology for the Lake Jackson Site

Lake Jackson I phase. The earliest phase, Lake Jackson I, is characterized by the presence of Wakulla Check Stamped, Fort Walton Incised, engraving, and mica inclusions. This phase has few of the typical Mississippian vessel forms, motifs, or appendages of the next phase.

Lake Jackson I assemblages are similar to ceramic assemblages from Apalachicola River sites dating to the Cayson phase. The Cayson phase has been securely dated by a series of radiocarbon dates to A.D. 1000-1200 (Scarry 1990:235-236). In addition, a carbon sample associated with the Lake Jackson I assemblage below Mound 5 yielded a radiocarbon date of A.D. 1040 $\pm$ 110. Given this information, Lake Jackson I probably begins around A.D. 1050 or 1100 (perhaps as early as A.D. 1000) and lasts until about A.D. 1150.

Lake Jackson II phase. The ceramic assemblage of the Lake Jackson II phase is much more diverse than that of the first phase. Fort Walton Incised increases, and other Fort Walton ceramic types appear: Cool Branch Incised, Marsh Island Incised, and Lake Jackson Incised. Red-filmed pottery is also found. In addition to unrestricted bowls, collared jars, other kinds of jars, carinated bowls, bottles, and

beakers are now found. Loop handles and strap handles start to show up. These characteristics continue throughout the phase, but there are sufficient differences between assemblages to be able to divide the phase into an early subphase and a late one.

Early Lake Jackson II is characterized by the additional presence of Wakulla Check Stamped (in lower proportions than in Lake Jackson I), Carrabelle Punctated, *variety Meginnis*, and cob-marked pottery. Early Lake Jackson II rims are either unaltered or folded. The early Lake Jackson II phase probably extends from about A.D. 1150 to 1250.

Late Lake Jackson II rims are often modified in some way: notched, ticked, or scalloped. In this subphase, Wakulla Check Stamped, Carrabelle Punctated, *variety Meginnis*, and cob-marked pottery do not occur. Handles continue, with strap handles being more frequent now than earlier; and lugs first show up during this subphase. Probably the late Lake Jackson II phase dates from about A.D. 1250 to 1400.

The date ranges for the Lake Jackson II subphases are suggested by time ranges for ceramic types homologous to Cool Branch Incised which is diagnostic of Lake Jackson II. In the Black Warrior River valley, Moundville Incised is found primarily during the Moundville I phase (A.D. 1050-1250) and the early part of the Moundville II phase (A.D. 1250-1400) (Steponaitis 1983:324), while in the Lower Chattahoochee River valley, Lake Jackson Decorated, *variety Cool Branch* occurs between A.D. 900 and 1400 (Schnell et al. 1981:173). In addition, in Mound 3 at Lake Jackson, cob-marked pottery (diagnostic of early Lake Jackson II) occurs in levels near a radiocarbon date of A.D. 1240 $\pm$ 90 (Jones 1982:41).

Lake Jackson III phase. In the Lake Jackson III phase, Cool Branch Incised is not present, nor are mica inclusions, carinated bowls, Fort Walton Incised, *varieties Cayson* and *Englewood*, and possibly Marsh Island Incised and strap handles. Red-filmed pottery, Lake Jackson Incised, and other varieties of Fort Walton Incised continue to be found, along with the various kinds of rim alterations. Fluted rims seem particularly characteristic of Lake Jackson III. A time range of A.D. 1400 to 1500 for this phase seems likely.

The terminal date of A.D. 1500 for the occupation of Lake Jackson is suggested by a radiocarbon date of A.D. 1476 ± 85 from the final stages of Mound 3 (Jones 1982:20, 1994:124) and by the fact that the capital town of Apalachee in 1539 is known to have been located at the Martin site in downtown Tallahassee (Ewen 1989:37).

The Growth of the Lake Jackson Site

The various investigations at the site allow for the formulation of a picture of the growth and development of the site. There are a few gaps, however. Because one gap is the lack of data on Mound 1 and the area surrounding it, the discussion below will focus on the development of the main mound precinct.

A second gap in the database concerns Mound 2, the largest of the mounds. This is the only platform mound in the main precinct for which there are no submound data. Some information exists about the final stage of mound construction as a result of the two small monitoring operations, but nothing is available about earlier stages. The 1989 auger survey provides some idea of what was going on immediately north and west of the mound, and surface collections made by Daniel Penton in 1968 add some information about areas to the east and northeast. But in general, much less is known about Mound 2 than about the other mounds.

Another gap concerns Mound 7 and the surrounding area about which almost nothing is known. Notwithstanding these missing pieces of data, much can be said about the growth of the site.

Lake Jackson I phase. In the Lake Jackson I phase, the site was small; Mounds 3, 4, 5, and 6 did not exist (see Figure 5-10). Mound 2 may have been started, but this is speculation based on its large size; no evidence one way or the other is presently available.

The earliest component at the site is below Mound 5. This is a rich dark midden with a relatively high percentage of Wakulla Check Stamped pottery and some Fort Walton pottery types. Auger survey results suggest that this occupation area extended no more than 30 m around the mound. Two other parts of the site, north of Mound 4 and between Mounds 2 and 4, may have had some small occupations, although it is possible that settlement in these places did not begin until the next phase.

Early Lake Jackson II phase. In the early Lake Jackson II phase, settlement at the site expanded considerably (see Figure 5-11). Mound 5 was begun and may have been finished during this subphase. Mound 2 must surely have been underway at this time. Mounds 3, 4, and 6 were probably not yet started, but people were living in the spots where Mounds 3 and 4 would later be built and were also living to the northeast of Mound 4. No evidence exists for occupation in the vicinity of Mound 6. A small area around Mound 5 continued to be occupied during early Lake Jackson II.

The areas north of Mound 4 and between Mounds 2 and 4 show evidence of dense occupation during this time. Frank Fryman (1969) and John Griffin (1950:101)

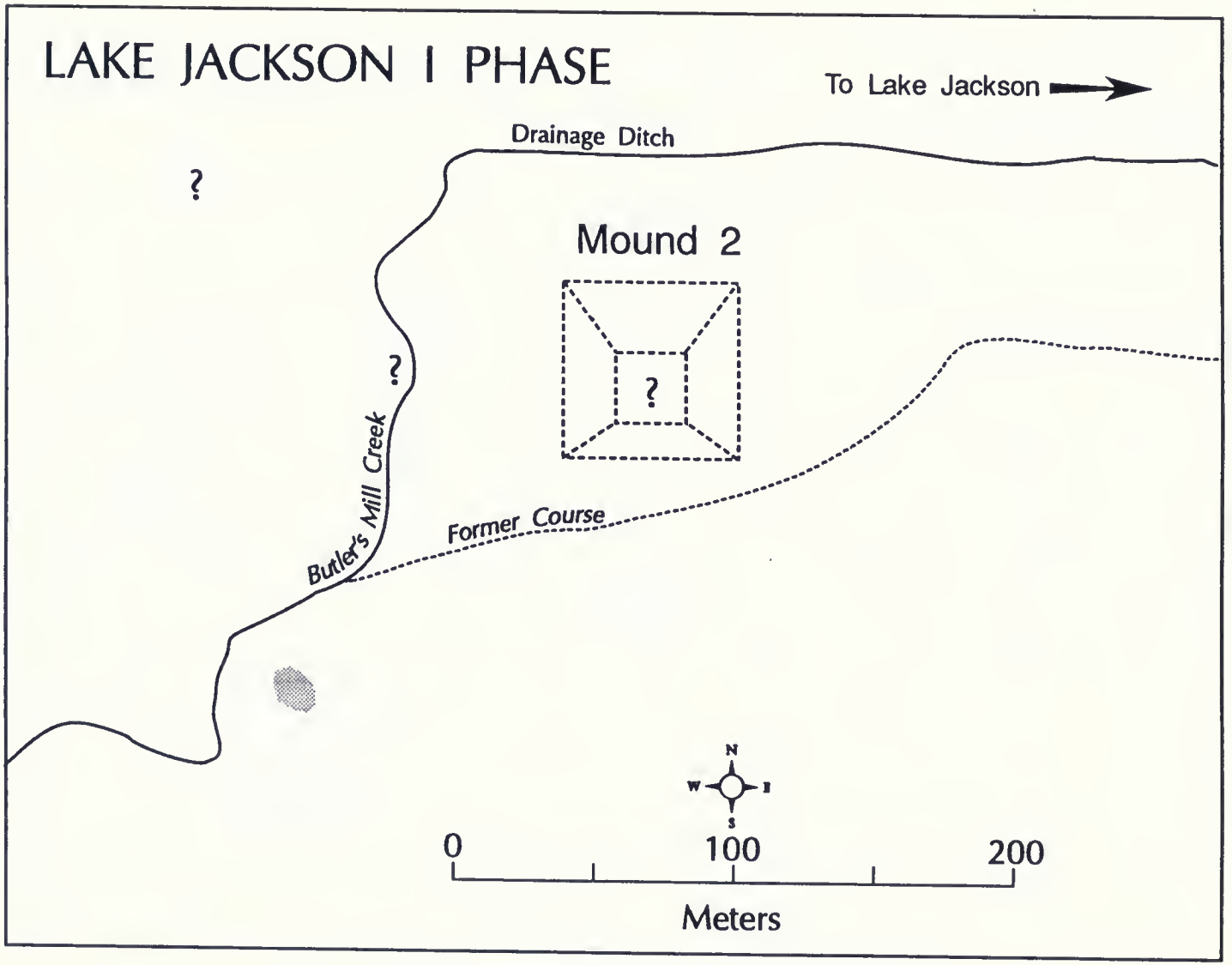

Figure 5-10. Lake Jackson I Phase Occupations.

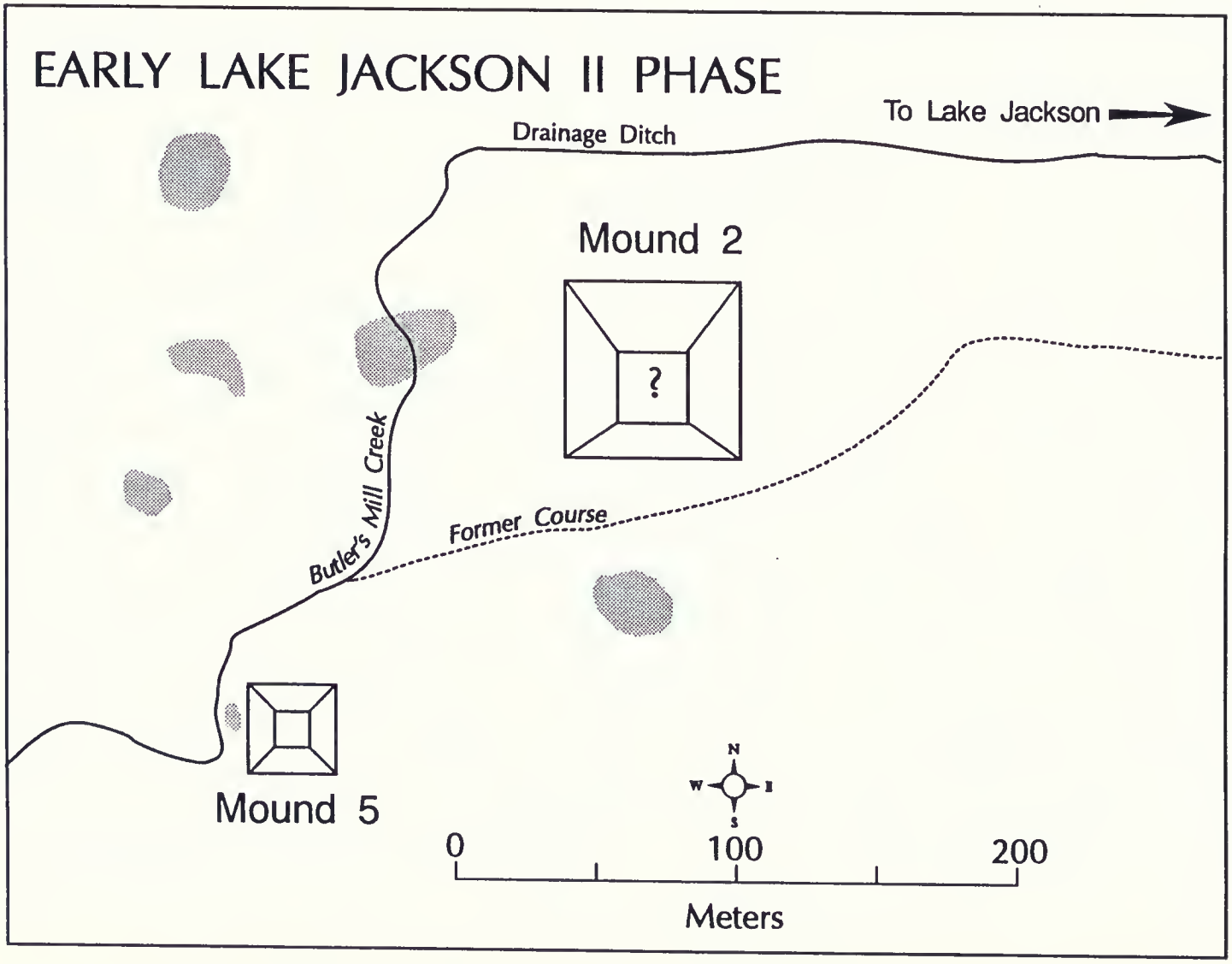

Figure 5-11. Early Lake Jackson II Phase Occupations.

both reported dark midden extending about half a meter deep, accompanied by postholes, clay floors, pits, and other features.

Griffin's excavations also indicated a relatively unused area to the south--possibly a plaza or deliberately cleared space. The auger survey also showed unoccupied space in this vicinity.

Late Lake Jackson II phase. By the late Lake Jackson II phase (Figure 5-12), all the platform mounds were under construction. Mound 5 was probably completed by this time. Mound 6 was begun and possibly finished during this subphase. Mounds 2, 3, and 4 were clearly in operation, but the final stages had not been reached (except possibly at Mound 4--Griffin [1950:104, 109] found late Lake Jackson II artifacts in the top of the mound).

The area around Mound 5 may not have been occupied at this time. All artifacts from the mound itself and the surrounding area date no later than early Lake Jackson II. Occupation north of Mound 4 also seems to have decreased. The eastern part of Fryman's excavation dates to early Lake Jackson II. The later, western units show much lighter occupation, suggesting that this area was less intensively used in late Lake Jackson II. Around Mound 4 itself, artifacts associated with this subphase are most common south and west of the mound. The area between Mounds 2 and 4 continues to be occupied although perhaps less intensively than in earlier times.

The auger survey showed thick dense midden north of Mound 2, with artifacts associated mainly with late Lake Jackson II and the following Lake Jackson III phase. Typical late Lake Jackson II characteristics such as lugs and notched and ticked rims are found relatively close to the mound. They do not extend as far north as the present-day drainage ditch. Penton's surface collection east of Mound 2 also yielded

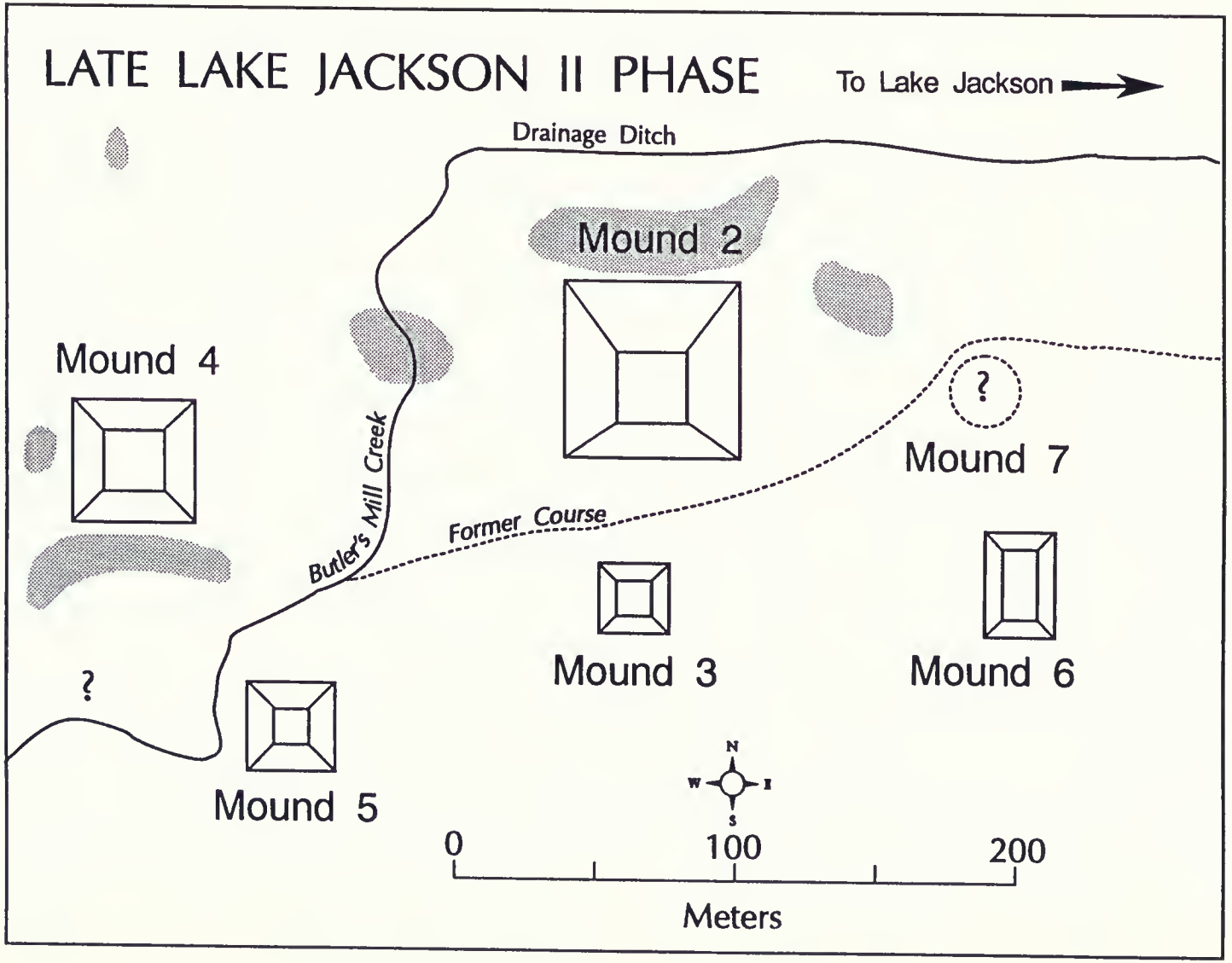

Figure 5-12. Late Lake Jackson II Phase Occupations.

late Lake Jackson II artifacts. Presumably people also lived near Mounds 3 and 6 at this time, but no data for this speculation are currently available.

Lake Jackson III phase. In the Lake Jackson III phase, settlement seems to have been most intensive in the central part of the site (see Figure 5-13). Mounds 4, 5, and 6 had probably been completed before the beginning of this phase, and Mounds 2 and 3 were probably finished during the course of the phase. Artifacts acquired from the last stage of Mound 2 indicate that it was built no earlier than the late Lake Jackson II phase, most likely no earlier than Lake Jackson III. A radiocarbon date from the top of Mound 3 places its last construction stage near the end of the fifteenth century.

People continued to live in the area north of Mound 2, and occupation spread northward somewhat, at least to where the drainage ditch now is. Both of Penton's test pits date to this phase. The area east of the mound may also have been inhabited, though probably to a lesser extent than earlier. The area between Mounds 2 and 4 was still occupied. This one place seems to be the longest continually occupied part of the site, extending from the early Lake Jackson II phase to the end of Lake Jackson III. North of Mound 4, there may still have been a small occupation of some sort. No data exist for the area surrounding Mound 6, but the areas around Mounds 4 and 5 contain nothing that would indicate use during this time. About 50 m south of Mound 4, however, a few Lake Jackson III or later artifacts were found during the auger survey, suggesting a limited presence at this time.

After A.D. 1500. The main occupation of the site occurred during these three phases, but there are occasional indications of residents or visitors in later times. Several investigators, for example, have found complicated stamped sherds typical of

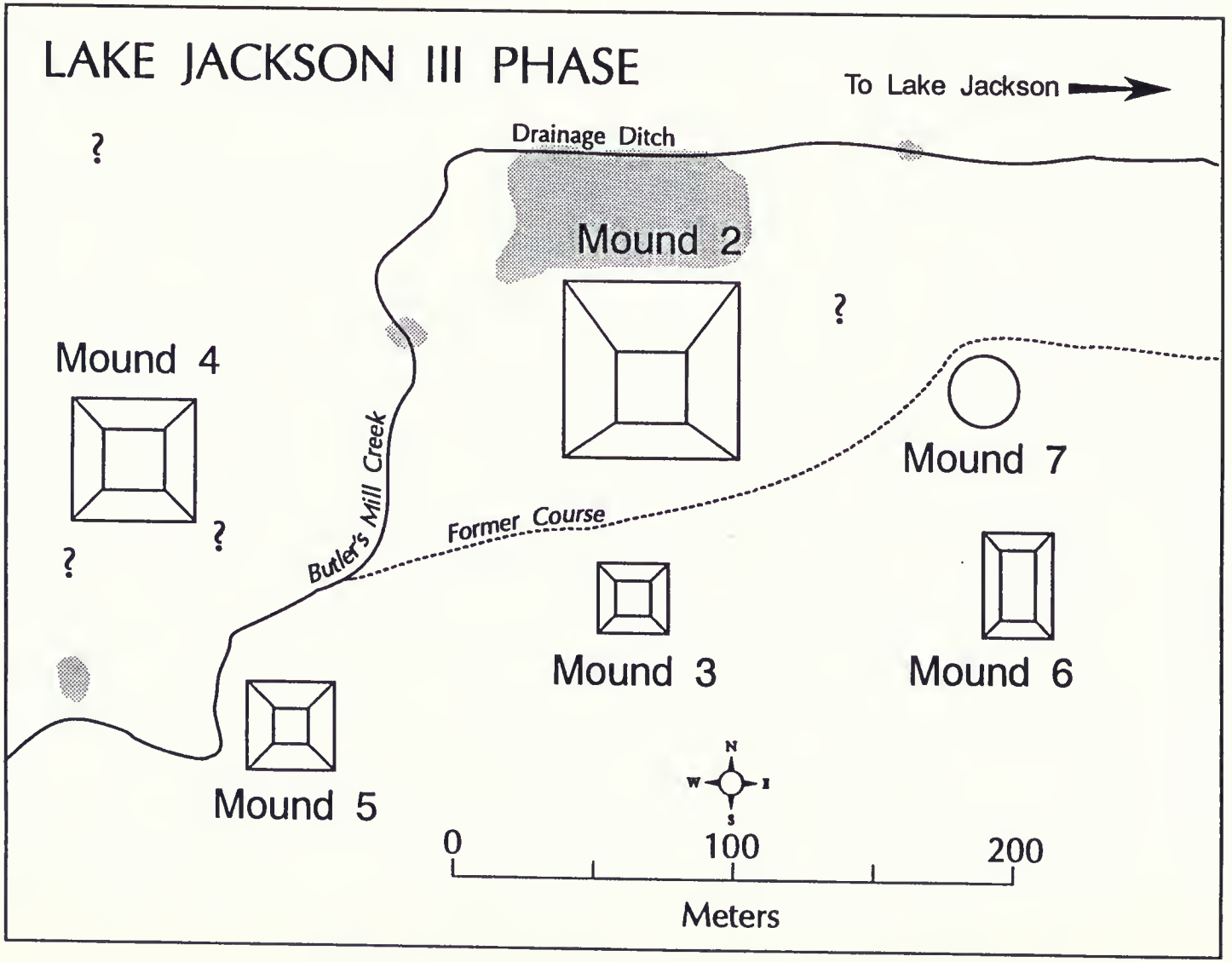

Figure 5-13. Lake Jackson III Phase Occupations.

the post-contact Velda phase (A.D. 1500-1633). During the auger survey, a blue glass bead was recovered from the borrow pit southwest of Mound 4; the bead dated to the seventeenth century. About 200 m north of where the bead was found, fragments of Spanish majolica also dating to the seventeenth century have been found (Terzis and Smith 1990). These few and scattered artifacts suggest a continuing but small-scale and sporadic presence at the site after 1500.

Lake Jackson as a Mississippian Capital Village

The survey reported in Chapters 3 and 4 showed that an architectural template or standard for Mississippian capitals exists. Although this model varies slightly depending on local circumstances (e.g., need for defense, the size of the polity, or site topography), the basic characteristics of Mississippian capitals remain the same. Size and structure characteristics of Mississippian capitals were summarized in the final sections of Chapters 3 and 4. The passage below draws together this information to describe the Mississippian-capital template.

A typical Mississippian capital includes one or more platform mounds arranged in an enclosed-central-space plan. A plaza thus usually occupies the center of the community. Mounds, most of which are simple truncated pyramids, are usually aligned to each other. Mounds are typically about 3 m high. The mound center is generally oriented to a topographical feature, most often a river. Frequently, the mounds are also oriented to the cardinal directions. The largest and tallest mound (generally about 4 m high) forms a base for the chief's house, which is typically larger than other buildings at the site and invariably rectangular. This main mound usually stands on the north or west side of the mound precinct. Religious structures often stand on a secondary mound near the main mound. Elite burials occur in the mound

underlying the religious structure but rarely in the mound below the chief's house. The mound precinct may be surrounded by a wooden clay-plastered palisade or some other form of fortification (e.g., a ditch or earthwork).

It was noted earlier that precolumbian Apalachee is an atypical Mississippian polity. Its setting is not riverine but fertile hill country surrounding large lakes. Moreover, Apalachee is located at the edge of the Mississippian world with non-Mississippian Florida chiefdoms to the east and southeast. Is Apalachee's capital also atypical? Does it show foreign (i.e., non-Mississippian influence) in its form? These questions are explored below.

The Size of Lake Jackson

As was seen in Chapter 3, Lake Jackson is a Medium-Large site. Table 5-2 lists the specific size attributes of the site along with comparative data regarding other Mississippian sites.

Number of mounds. Lake Jackson has seven mounds. This number is well above the median number of two for all Mississippian centers. In fact, seven is also above the upper hinge (four mounds). Only 33 mound centers (7.1% of the 467 sites for which number of mounds is known) are larger than Lake Jackson in numbers of mounds. Lake Jackson is thus well above medium by this criterion.

Mound precinct area. The mound precinct area (MPA) of Lake Jackson is 19.0 ha. Again the figure for Lake Jackson is considerably above the median (8.2 ha) for Mississippian centers in general and also above the upper hinge (16.7 ha). Only 13 sites (19.7% of the 66 sites for which MPA is available) are larger than Lake Jackson in overall MPA. Remembering that this criterion excludes the smallest sites by number of mounds, Lake Jackson's MPA identifies it as a medium to large site. One point

worth noting before leaving the topic of MPA is the effect of the shape of the Lake Jackson site on its MPA. Lake Jackson's comparatively large MPA is partly a product of the presence of an outlying mound (Mound 1) at some distance from the main mound precinct. If Mound 1 is excluded, then the MPA (i.e., of the main mound precinct) drops to 6.8 ha, just below the median. Because of this Lake Jackson should probably be regarded as medium-sized rather than large by the criterion of MPA.

Table 5-2. Size Characteristics of the Lake Jackson Site Compared to Mississippian Mound Centers in General.

Criterion	Lake Jackson	All Mississippian Mound Sites			
		Median	Upper Hinge	Number Larger than Lake Jackson	% Larger than Lake Jackson[a]
Number of Mounds	7	2	4	33	7.1
Mound Precinct Area	19.0 ha	8.2 ha	16.7 ha	13	19.7
Height of Main Mound	11.0 m	4.0	6.1	21	5.9
Volume Index of Main Mound	52.8	5.6	15.1	17	6.3
Overall Size	Medium-Large[b]	--	--	14	5.2

[a] Percentage calculated on number of sites for which data are available for each criterion, not on total number of sites in survey.

[b] 23 other sites are included in the Medium-Large category.

Height of main mound. The height of the main mound at Lake Jackson is 11.0 m. This figure is far above the median of 4.0 m for all Mississippian main mounds

and considerably above the upper hinge (6.1 m). In fact, 11.0 m is 1.3 times the midspread above the upper hinge, almost placing Lake Jackson in the category of statistical outlier. Twenty-one mound centers (5.9% of the 353 sites for which main mound height is known) have taller main mounds than Lake Jackson. If height of main mound were an accurate indicator of site size, Lake Jackson could be considered a large site.

Volume index of main mound. The volume index (VI) of the main mound at Lake Jackson is 52.8, once again considerably above the median (5.6) and the upper hinge (15.1). In this category, Lake Jackson is far enough above the upper hinge to be classed as an outlier. Seventeen sites (6.3% of the 271 sites for which main mound VI is available) are larger than Lake Jackson. The shape of the distribution and Lake Jackson's status as an outlier suggest it be considered a large site by the criterion of volume index of main mound.

Summary. By the overall size framework presented at the end of Chapter 3, Lake Jackson ranks as a Medium-Large site along with 23 other mound centers. Only 14 sites (5.2% of the 268 classifiable sites) fall into categories larger than this.

Lake Jackson's status as a Medium-Large site deserves some additional discussion and comparison at a regional level. Within the Lower Southeast[3], only four sites larger than Lake Jackson can be found (two Very Large sites--Moundville and Etowah; and two Large sites--Ocmulgee and Bottle Creek), although several others also fall into the Medium-Large category (Rood's Landing, Mulberry, and

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3 The Lower Southeast is defined here as the area drained by the Tombigbee-Black Warrior, Alabama-Coosa, Chattahoochee-Apalachicola-Flint, Ocmulgee-Oconee-Altamaha, Savannah, Santee-Wateree-Congaree, and Pee Dee river systems and adjacent coastal areas.

Letchworth). The Lake Jackson site (along with Singer-Moye) is the fifth largest site in the Lower Southeast in numbers of mounds. It has the third largest MPA, the eighth tallest main mound (along with Scull Shoals and Adamson), and the fifth largest main mound volume index. By all these measures Lake Jackson is among the largest mound centers in the Lower Southeast.

It is also worthwhile to note (if the problematic and possibly non-Mississippian Letchworth site is excluded) that the closest same-sized or larger site to Lake Jackson is Rood's Landing (also Medium-Large), 200 km away. To consider what this distance to a potential competitor means, it is useful to compare the situations of comparably sized sites such as Arcola in the Lower Mississippi Valley and Obion in northwestern Tennessee (see Table 5-3). From Arcola the nearest same-sized or larger site is Winterville (a Very Large site) only about 40 km away. The closest same-sized or larger site to Obion is Kincaid (a Large site) about 80 km distant. A short distance between competitors might be expected for the crowded Lower Mississippi Valley, but even Obion (in a less densely populated area) lies less than half as far from its nearest competitor than Lake Jackson is from its closest rival. These figures demonstrate the importance of Lake Jackson to a far larger piece of the Mississippian world than either Arcola or Obion were able to command.

As was pointed out in Chapter 3, the classification of Mississippian mound centers as "medium" (whether Medium-Large or Medium-Small) does not mean that they occur in medium frequency. In fact, medium-sized sites are quite rare. Medium-Large sites constitute only 9.0% of the classifiable sites, while Medium-Small sites account for 17.5%. It follows then that medium-sized also does not mean medium importance. Quite the contrary, in cases such as that of Lake Jackson, a Medium-

Large site may be the most important Mississippian political capital within a radius of several hundred kilometers. Lake Jackson is clearly more important, especially in a regional context, than a Medium-Large status would initially suggest, ranking as it does among the ten largest Mississippian mound centers in the Lower Southeast.

Table 5-3. Characteristics of Three Medium-Large Mound Centers.

Criterion	Lake Jackson	Arcola	Obion
Number of Mounds	7	6	7
MPA	19.0 ha (6.8 ha for main mound precinct)	6.3 ha	7.0 ha
Height of Main Mound	11.0 m	13.0 m	12.0 m
VI of Main Mound	52.8	54.6	44.7
Distance to Nearest Same-sized or Larger Mound Center	200 km	40 km	80 km

The Structure of the Capital

In most structural respects, Lake Jackson fits the Mississippian-capital template described above quite well. The few differences that occur fall well inside the range of variation among Mississippian capitals.

Layout. Most Mississippian mound centers have a plan in which mounds surround an open space. This "enclosed-central-space plan" or a modification of it in which the space is partially enclosed occurs at 73.7% of 91 mound centers for which information was available.

The plan of the seven-mound Lake Jackson site varies from this ideal in two ways. First, it has a main precinct and an outlying mound. Outlying mounds or

multiple clusters of mounds occur at only 13.2% of the 91 sites. Sites with outliers tend to have large numbers of mounds; the median number is 9.5 compared to 6 for the whole sample.

Second, the main precinct at Lake Jackson exhibits a minority plan, here described as "gridded" (5.5% of 91 sites). Gridded plans also usually occur at sites with large numbers of mounds; sites with gridded plans have a median of 13 mounds.

In all likelihood, both of Lake Jackson's uncommon features result from the addition of mounds to an enclosed-central-space plan. Lake Jackson's outlying mound and gridded main precinct therefore probably reflect the greater than average number of mounds at the site.

At many Mississippian mound centers, the mounds are aligned to each other. As was seen in Chapter 4, at 91 sites with adequate data, 49 sites (53.8%) contained aligned mounds, 14 sites (15.4%) contained mounds not aligned to each other, and 28 sites (30.8%) had both aligned and non-aligned mounds. The aligned category has a higher percentage of sites with 10 or more mounds and a wider range (2 to 100 mounds) than does the non-aligned category. Alignment of mounds thus seems to increase as mounds are added to sites. This pattern suggests that aligned or formal arrangements result not from a plan laid out at the beginning of a site's history but from the presence of a continuing central authority which dictated or influenced the relationships of mounds to one another.

The mounds at Lake Jackson are clearly aligned to one another. Information on the beginning date of construction of the mounds exists for four mounds (Mounds 3, 4, 5, and 6). One of these (Mound 5) was probably begun in the early Lake Jackson

II phase (A.D. 1150-1250). Construction on the other three appears to have started in the following late Lake Jackson II phase (A.D. 1250-1400). Clearly, the four mounds were not all laid out simultaneously, although Mounds 3, 4, and 6 may have been planned at roughly the same time, after Mound 5 was already standing. Rather, the site's formal arrangement may reflect a strong central authority at Lake Jackson (especially during the late Lake Jackson II phase), an inference supported by other data from the site (e.g., the size of the site, the size and height of the main mound, the presence of numerous prestige goods).

In Chapter 4, a compactness index was calculated for 66 Mississippian mound centers. The compactness index describes how compact or how spread out a site is. This index was determined by dividing the mound precinct area (MPA) by the number of mounds at the site. Compactness index ranges from 0.2 (very compact) to 8.1 (very spread out). The median compactness index is 1.1.

The compactness index of the Lake Jackson site is 2.7. This figure is well above the median and indicates that the site is quite spread out. The high compactness index results mainly from the presence of an outlying mound at the site. The main mound precinct alone is more compact, with a compactness index of 1.0.

In Chapter 4, compactness was shown to be unrelated to the size of a site or to the presence or absence of fortifications (although more data might change this last conclusion). A site's location within the Mississippian world does, however, seem to affect its compactness. Sites in central locations are more compact (have a lower compactness index) than those in peripheral locations. Given Lake Jackson's location at the edge of the Mississippian world, its high index, therefore, is not surprising.

Orientation. As was seen in Chapter 4, Mississippian mound centers are often oriented with their long axes parallel or perpendicular to a waterbody (usually a river). Because many Southeastern rivers flow north-south, many mound centers are also thus oriented to the cardinal directions, making it difficult to separate symbolic from practical siting influences.

Though not located on a river, the Lake Jackson site is oriented to water. The main mound precinct lies perpendicular to Meginnis Arm, an extension of Lake Jackson. The main mound precinct also has a cardinal point orientation with the long axis running east-west. Presumably this results from the north-south orientation of Meginnis Arm.

Chief's House. The largest and tallest mound at Lake Jackson is Mound 2. This mound is interpreted here as the location of the chief's house. Mound 2 has seen only minor archaeological investigation. John Griffin cleaned a vandal's cut on the south slope and recorded the profile, and Henry Baker monitored the placement of 24 small holes dug for the seating of stair steps along the north slope. In addition, I monitored the placement of a sign high on the northwest slope. No other excavations have been carried out on the mound. Consequently, nothing can be said about the size, form, or construction materials of any buildings that might have been constructed on top of the mound. Some comments can be made, however, about the main mound itself.

Mound 2 is a simple truncated pyramid (TP1), the most common mound form found at Mississippian mound centers. Five other mounds at Lake Jackson are also simple truncated pyramids; the form of the seventh is indeterminate.

Mound 2 stands in a central location at the Lake Jackson site. This arrangement is one of two common patterns at Mississippian mound centers. As was seen in Chapter 4, the principal mound stands at the edge of the mound precinct at 76 sites (73.8% of a sample of 103 sites) (see also Reed 1973:35). The main mound stands at the center of the precinct at 27 sites (26.2%). Sites with central main mounds generally have more mounds (median of 8) than those with peripheral main mounds (median of 4 mounds). Central location may thus result from the addition of mounds as a site grows. The central location of Lake Jackson's main mound probably reflects the site's greater than average number of mounds.

Chief's storage facilities and communal structures. No data presently exist from the Lake Jackson site recording storage facilities or communal structures.

Religious structures. As was seen in Chapter 4, mounds which served as foundations for Mississippian religious structures generally contain burials, especially rich burials. This stands in contrast to main mounds (chiefs' houses) which rarely hold burials. Temple mounds also are usually the second or third largest and tallest mounds at their sites. Frequently, they stand near the main mound or near the central plaza. Sometimes they are enclosed by a wall or fence, and they may also hold stone or wood statuary.

In Chapter 4, Mound 3 at Lake Jackson was identified as the site of a religious structure. This identification was primarily based on the presence of extraordinarily rich burials in the mound. Other characteristics also point to Mound 3 as the site of a religious structure. Mound 3 (a TP1 form) is the third largest and tallest mound at the site and stands very near the main mound (Mound 2); the two mounds are only about 50 m apart. Further, Mound 3, along with Mounds 2, 4, and 5, borders an

architectural space known from archaeological investigations to be relatively clear of debris--a plaza (see below).

Fragmentary evidence of structures was found in Mound 3 during the salvage excavations described earlier in this chapter. Near the top of the mound a rectangular pattern of posts was uncovered (Jones 1982:10). This building was 7.3 by 9.3 m and was oriented north-south (as was the mound itself). In one of the earliest mound stages, several segments of wall trenches were discovered. Some of these appeared to represent rectangular buildings. Others, because of their orientation and position, may represent palisades (Jones 1982:10). This last, of course, would be quite in keeping with descriptions (archaeological and documentary) of walls around Mississippian temples.

The rectangular shapes of the structures on Mound 3 are typical for Mississippian buildings on mounds (see Chapter 4). However, rectangular buildings are uncommon in Apalachee where most known domestic and public buildings from this time period and later are circular (Tesar 1980:792; Payne 1982; Scarry 1984b; Scarry and McEwan 1991; Shapiro and McEwan 1992:66-67). The rectangular shape for these symbols of religious authority may have been influenced by the shapes of temple structures in other Mississippian communities. That influence would not necessarily have extended to the shapes of other structures in the polity.

Public spaces. Plazas or public spaces are common features of Mississippian communities. Plazas have been identified not only at mound centers but at other types of Mississippian sites as well (e.g., the Snodgrass site in southeastern Missouri [Price 1978:219]). At mound centers, the arrangement of mounds often suggests the

presence of plazas. These architectural spaces may not coincide with the boundaries of plazas, however, so identification should come through subsurface survey.

At Lake Jackson, the site's layout suggests at least two plazas, one bordered by Mounds 2, 3, 4, and 5, and one bordered by Mounds 2, 3, 6, and 7. Both hypothetical plazas would have been bisected by Butler's Mill Creek. Archaeologists have identified a cleared space between Mounds 2 and 4, confirming the presence of a plaza in at least part of the space bordered by Mounds 2, 3, 4, and 5. The three largest mounds at Lake Jackson (Mounds 2, 3, and 4) front on this plaza. No investigations have been carried out in the other proposed plazas to confirm their presence.

Walls. Many Mississippian mound centers, both large and small, were enclosed by fortifications in the form of an embankment, ditch, or wooden palisade. In Chapter 4, fortifications were identified at 47 sites (35.6% of 132 mound centers with adequate information). Because subsurface testing is necessary to determine the presence of palisades, this proportion could rise with additional research. Defensive earthworks (embankment and ditch) occur somewhat less frequently in peripheral areas of the Mississippian world than in central areas.

At Lake Jackson, located at the edge of the Mississippian world, no obvious embankments or ditches exist, and excavations have uncovered no evidence of a palisade. The absence of a palisade has not yet, however, been confirmed by subsurface investigations.

Summary. The Lake Jackson site can be seen to fit the Mississippian-capital template in a number of ways. Mounds at the site are simple truncated pyramids, the most common form of Mississippian mound. The mounds are also aligned to each

other. One plaza, adjacent to the three largest mounds, is known from archaeological excavations. The main mound precinct is oriented to a topographical feature, an arm of Lake Jackson. The platform serving as a base for a religious structure (Mound 3) is the third largest and tallest mound at the site and stands very close to the main mound, presumed to be the site of the chief's house.

The ways in which the Lake Jackson site differs from the Mississippian-capital template do not detract from the essentially Mississippian character of the site. Rather, the variations are typical of Mississippian capitals in particular geographical settings or of larger-than-average capitals. The spread-out nature of the mound center and the apparent lack of fortifications, for example, are most typical of capitals, which like Lake Jackson, stand at the edges of the Mississippian world. And the gridded layout of the main mound precinct and the central position of the main mound occur mainly in larger Mississippian capitals.

Summary

Considerable information exists about the Lake Jackson site as a result of its long history of archaeological investigations. Much of this has been relatively inaccessible until recently due to logistical constraints on several of the projects carried out there. The information presented in this chapter is a step toward rectifying this situation.

In the final sections of this chapter, the size and structural characteristics of Lake Jackson were examined in light of the characteristics of Mississippian capitals in general. A summary of these findings is presented below in the form of a series of statements about the site.

- Lake Jackson has seven mounds, well above the median number of mounds (two) for Mississippian capitals.
- Fewer than 10% of capitals for which number of mounds is known have more mounds than does Lake Jackson.
- The mound precinct area of Lake Jackson is 19.0 ha, well above the median (8.2 ha).
- Fewer than 20% of capitals for which mound precinct area is known are larger than Lake Jackson.
- The main mound at Lake Jackson is 11.0 m tall, 7 m greater than the median height of Mississippian main mounds (4.0 m).
- Fewer than 6% of capitals for which height of the main mound is known have taller mounds than does Lake Jackson.
- The volume index of the main mound is 52.8, far above the median of 5.6.
- Fewer than 7% of mound centers for which main mound volume index is available have larger main mounds.
- Lake Jackson is a Medium-Large Mississippian capital (along with 23 other capitals).
- Only about 5% of classifiable Mississippian capitals fall into larger size categories than does Lake Jackson.
- Unlike the enclosed-central-space plan of most Mississippian capitals, Lake Jackson has a main precinct and an outlying mound; the main precinct exhibits a gridded plan.
- Lake Jackson's outlying mound and gridded main mound precinct probably reflect its greater-than-average number of mounds.

- Mounds at Lake Jackson are aligned to each other.
- The Lake Jackson site is relatively spread out, perhaps reflecting its location at the edge of the Mississippian world (capitals in peripheral locations tend to be more spread out than those in central locations).
- Like many Mississippian capitals, the long axis of Lake Jackson's main mound precinct is oriented to a waterbody, in this case Meginnis Arm, an extension of Lake Jackson.
- Again, as is the case for many Mississippian capitals, the long axis of Lake Jackson's main mound precinct is oriented to the cardinal directions (probably due to the north-south alignment of Meginnis Arm).
- The main mound (Mound 2) is a simple truncated pyramid, the most common form of Mississippian platform mound.
- Mound 2 stands in a central location within the main mound precinct, a minority position more frequent in capitals with higher numbers of mounds.
- Mound 3, which stands just south of the main mound, is the third largest and tallest mound at the site, and contained 24 exceedingly rich burials; it is probably the location of the main religious structure.
- One plaza (identified through subsurface investigation) exists between Mound 2 and 4; at least one other plaza is suggested by the arrangement of mounds at the site.
- No earthworks or ditches occur at Lake Jackson.
- No palisades are known from the site; the apparent lack of fortifications is more common in capitals in peripheral areas of the Mississippian world.

Clearly, despite its atypical setting and its position at the edge of the Mississippian world, the Lake Jackson site is a quintessential Mississippian capital.

CHAPTER 6
MISSISSIPPIAN CAPITALS AND THE ANALYSIS OF MISSISSIPPIAN POLITICAL STRUCTURE

Political Structure and the Built Environment

Architecture as Data Set

Archaeologists have long looked to the physical landscape for clues to deciphering political organization. Traditionally, they have done this by examining spatial patterning of sites across the landscape (e.g., Wright and Johnson 1975; Renfrew and Level 1979; Steponaitis 1978; Findlow and Goldberg 1983:214). But architecture and patterning within sites are also useful in studying political organization.

In fact, architecture (defined as "any structure or feature representing the built environment" [Abrams 1989:47]) is a very good source of information on social and political organization for several reasons. First, architecture is a "response to the needs of the people who construct it. People who build their own houses make those structures fit the activities important in their daily lives" (Gilman 1987:538). Architecture therefore reflects people's adaptation to the environment and their subsistence and storage needs. Moreover, the house "provides the environment and context for social life" (Wilson 1988:58), in effect, serving as a stage upon which the activities of community life are carried out. Similarly, public or corporate architecture is the stage for public political, religious, and economic activities (Knight 1981). The

form of the stage will depend to some degree on the activities taking place on it. And, finally, "architecture is a materialization of structure" (Wilson 1988:61). It provides "people the world over with an instrument, and a model, for conceiving the world in a complex, comprehensive way" (Wilson 1988:58). Communities, particularly capitals, thus often serve as microcosms of the world (Wilson 1988:73; De Montmollin 1989:164-171).

The cultural embeddedness of architecture, its particular suitability as a medium of symbolic expression (due to its visibility and durability), its ubiquity at archaeological sites (at least in its domestic form), and, in the case of public architecture, its frequent above-ground survival make it an excellent data set for archaeologists studying political structure.

Although Patricia Gilman (1987:538) laments the neglect of the use of architecture as a data set, that use has become more frequent in recent years as archaeologists have come to recognize the value of studying architecture, both domestic and public (e.g., Hunter-Anderson 1977; Rudolph 1984; Gilman 1987; Sykes 1989; De Montmollin 1989; Abrams 1989; Trigger 1990). Gilman, herself, studying domestic architecture, finds that "architectural forms and changes in those forms can be an extremely powerful tool for understanding cultural change" (1987:538). And, Elliot Abrams (1989:62), in a treatise on architecture and energy expenditure, concludes that

> . . . ethnographical and archaeological data clearly suggest that architecture is a relatively effective and valuable archaeological index of cultural complexity, and support the general pattern of increased architectural energy expenditure concomitant with increased cultural complexity.

The Architecture of Capitals

The architecture of political capitals provides a specialized data set for the study of political organization. A capital, as was seen in Chapter 1, is the principal settlement and home of the chief. In chiefdoms, political, religious, and economic activities are inseparable; the ruler, or chief, is the leader in all three. The capital is thus the center of political, religious, and economic activities of a chiefdom.

The architecture of the capital, besides being the stage for polity-wide political activities, also represents a highly visible means of advertising the chief's power and authority. In essence, the capital's architecture is a material manifestation of the power and authority extant through time in a particular political system (cf. Wilson 1988:148). Studying the capital can thus provide information on the political structure of the chiefdom.

This dissertation has presented some specific ways that architectural and spatial patterning of capitals can be used to study political organization, focusing especially on Mississippian capitals. To analyze the capital's built environment in this manner it is important to understand the nature of power and authority. The following section summarizes the concepts of power and authority and the ways in which they are reflected in the architecture of Mississippian capitals.

Power, Authority, and Mississippian Political Structure

The Nature of Power and Authority

Power. Power is the ability to achieve one's goals. Implicit in this definition is the ability to control the actions of other people, either through positive or negative

sanctions (promises or threats). Power is not the *right* to control others' actions but the *capacity*.

A leader gains power by calling upon one or more of several power bases: (1) persuasion; (2) competent leadership; (3) control of valued resources (tangible or intangible); (4) force; and (5) authority.

Because power is essentially the control of others' actions, it can be measured by the number of people a leader can mobilize. Any public activity or structure which involves the cooperation of people expresses the leader's power. Power can thus be measured by the number of people involved in an event or in the construction of a structure. Parades, mass assemblies for political or religious reasons, and large work forces all directly express power. Structures (buildings, fortifications, or other public works such as canals) indirectly express power by virtue of requiring large numbers of laborers for their construction. In sum, power is expressed by size and number, and any event or structure taken to excess is an expression of power.

Authority. Authority (one of the bases of power) is the legitimate right to exercise power. To be effective, the legitimate basis for authority must be accepted as right by both leader and followers. The hallmark of authority is command rather than positive or negative sanction.

A leader acquires authority by calling upon one or more societal values: (1) tradition; (2) inheritance or social rank; (3) supernatural support; and/or (4) a code of laws.

Unlike power, which is expressed by great size or number, authority is conveyed by emphasizing the specialness of the authority holder. Protocol, rituals, regalia, elaborate decoration, prominent location, and segregation all convey that the

individuals so affected maintain a special standing. On occasion, authority symbols occur in large size or number. This linking of power and authority suggests heavy dependence by the leader on the particular form of authority represented. In the case of the monumentalization of a religious structure, for example, it is safe to conclude that the leader relies heavily upon religion to legitimize his power.

The importance of communicating power and authority. Because the exercise of both power and authority by leaders depends on the acquiescence of followers, advertisement of the leader's power and right to power is imperative. Advertisement of power and authority is most effective when it is simple and visible to large numbers of people. The massing of large numbers of people in assembly effectively communicates the power of the chief but only for the duration of the assembly. The construction of large public works, however, provides a permanent manifestation of the large work force mobilized to build them. The built environment of the capital thus becomes a vital element in the maintenance of power and authority.

Power Made Visible

As was seen in Chapter 2, in the built environment, chiefly power is expressed by size or number characteristics such as the size of the capital (population), the size of the chief's house, the size or number of the chief's storage facilities, and the size or extent of fortifications. The monumentalization of selected dwellings, storehouses, or religious structures also expresses power, although the converse is not true; the absence of monumental architecture does not indicate the absence of power. All these examples reflect the number of people the chief can mobilize to carry out construction, to provide tribute, or to defend the polity.

In Mississippian capitals, several aspects of the built environment reflect chiefly power. These include (1) size of chief's house (reflected in the volume index of the main mound and the floor area of the structure on top of the mound); (2) size of mound center (best measured by a combination of main mound volume index and number of mounds); and (3) size and number of chief's storage facilities (unfortunately not generally available due to incomplete data).

Non-architectural expressions of chiefly power also occur at Mississippian capitals. Such expressions are wealth items (copper, marine shell, pearls, galena, etc.), weapons (e.g., maces, celts, especially those made of rare materials), and "expensive" burials (in terms of labor, goods, or human sacrifices). Some of these, of course, also express aspects of authority (see below).

Authority Made Visible

In the built environment, chiefly authority is expressed by features and structures that mark the leader as special in some way. Features that reflect the chief's authority include prominent or separate location of the chief's house, special decoration or elaboration of the chief's house, internal walls separating chiefly or religious structures from the general populace, and prominent location or monumentalization of religious structures. All these reflect the right of the chief to rule by virtue of social position or divine support.

In Mississippian capitals, chiefly authority appears in the built environment in several ways: (1) the alignment of mounds; (2) prominent location and segregation of the chief's house (i.e., on the tallest mound); (3) monumentalization of religious structures in some (but not all) capitals; and (4) internal walls such as those around temples.

Other expressions of chiefly authority can be found at Mississippian capitals as well. Some individuals were buried in special locations and accompanied by elaborately decorated items. Analyses of burial patterns indicate the ranking of groups of people (cf. Peebles and Kus 1977; Hatch 1976; Larson 1971; Brown 1971; Jones 1982; Payne and Scarry 1990). Artifacts have been found that appear to represent chiefly regalia and other authority symbols (Brown 1976:126-128; Knight 1986). In a few instances, evidence exists for chiefs or nobles having access to special foods such as particular cuts of meat (Rudolph 1984:41; Steponaitis 1986:391). Specially treated individuals and regalia almost always occur at mound centers rather than at ordinary settlements.

The preeminence in the archaeological record of prestige goods decorated with motifs related to warfare and mythology and associated with elite or noble individuals has led researchers to postulate the existence of a Mississippian chiefly religion or cult institution (Knight 1986:680; Brown 1976, 1985). Chiefly cults serve, according to V.J. Knight (1986:680) "to undergird and to sanctify political power by means of supernatural monopolies expressed in exclusive rituals." Cult institutions typically are associated with a distinguishable complex of *sacra*, or "representational art, artifacts, and icons . . . charged with conventional supernatural meaning, in the context of ritual activity or display" (Knight 1986:675). As described by Knight (1986:677), the Mississippian chiefly cult *sacra* consist mainly of portable items made of valuable materials and having design motifs related to warfare or mythology. Typical *sacra* would thus include ceremonial maces and celts, and copper plates embossed with mythological figures. Knight (1986:677) notes that this complex of

sacra largely (but not completely) corresponds to items often described as "Southern Cult" artifacts.

The Mississippian chiefly cult thus legitimized chiefly power by providing supernatural support and graphic evidence of that support. Chiefs would have used associated sacra or authority symbols to advertise the authority conferred on them by their leadership in the chiefly cult. In addition, internal rituals (excluding the general populace) would have been necessary in maintaining support by the nobility and subchiefs (the inner circle). Both the concept of the chiefly cult and the associated artifacts would have played an important role in the maintenance of Mississippian chiefship.

Precolumbian Apalachee: The View from Lake Jackson

Just as comparisons of Mississippian capitals can illuminate the nature of Mississippian political structure, examining one Mississippian capital diachronically can shed light on the political dynamics of a single Mississippian polity. In Chapter 5, size and structural characteristics of the Lake Jackson site were described and were compared to those of other Mississippian capitals. In the following section, this information has been combined with other data from Lake Jackson (e.g., burial goods) and from Apalachee (e.g., settlement distribution) to address transformations in power and authority in one Mississippian chiefdom.

Incipient Power and Authority at Lake Jackson

First Mississippian settlement in Apalachee. Mississippian settlement began in Apalachee around A.D. 1050 or 1100 during the Lake Jackson I phase. This settlement was probably the result of migration of Mississippian farmers from the crowded

Apalachicola River valley, 70 km to the west (Scarry 1990:242-244; Payne and Scarry 1990, 1994). Along the Apalachicola River during the preceding Weeden Island period (A.D. 200-1000), population rose steadily. Around A.D. 1000, maize agriculture began to replace Weeden Island foraging-hunting subsistence strategies, and simple chiefdoms began to appear along the river (Scarry 1990:235-237). During the Mississippian era, population in the Apalachicola Valley stabilized and may have even declined (Scarry 1990:234).

In contrast, settlement in the Apalachee area was sparse during the Weeden Island period (Tesar 1980:601-602). But around A.D. 1050 or 1100, with little evidence of local development, Mississippian characteristics began to appear in Apalachee (including pottery styles indistinguishable from those of the Apalachicola Valley). Population began to climb steadily and continued to do so for the next 500 years (Scarry 1990:234; Payne and Scarry 1990, 1994). This pattern suggests that people from the chiefdoms along the Apalachicola moved eastward from their crowded farmlands into the relatively unpopulated and extremely fertile Tallahassee Hills.

The earliest Mississippian settlements in Apalachee were dispersed around the Tallahassee Hills (Payne 1982; Payne and Scarry 1990). Very often, early sites clustered near the big lakes (Tesar 1980:617). Locations near lakes may have been preferred because they gave residents access to at least two environmental zones: (1) the lake basins and (2) the good farming soils of the adjacent ridges. This environmental combination is particularly harmonious. Fish from the lakes would have provided an excellent and necessary nutritional supplement to a maize diet, which by itself makes a population vulnerable to iron deficiency (see Larsen 1987:360).

Early settlement at Lake Jackson. With a radiocarbon date of A.D. 1040 ± 110 from an occupation zone below Mound 5, the Lake Jackson site may have been one of the earliest sites in Apalachee. Indeed, the location of the site is optimal for settlement by farmers from the Apalachicola Valley. The site is less than 8 km from the western edge of Apalachee and is one of the first locales that would be reached by travelers from the Apalachicola Valley. Large areas of fertile soil occur adjacent to the site, and the largest lake in Apalachee (famous in later centuries for its bass fishing) lies a short walk to the east. The site would be among the first suitable locales reached by travelers from the Valley. Moreover, the site also had easy access to the Gulf coast via the Ochlockonee River; although perhaps not important in the early years, this advantage would prove crucial later.

It is unclear whether Lake Jackson was a capital at the time of earliest settlement in Apalachee. Few data exist to aid interpretation. During the Lake Jackson I phase, occupation at the site was small; only two or three living areas have been found in what would later become the main mound precinct. These are about 100 m apart and may have been farmsteads. No mound-building is known from the Lake Jackson I phase. There is some possibility that early construction stages of Mound 2 (the main mound) were extant at that time, but the lack of archaeological tests at the base of Mound 2 make it impossible to do more than speculate. No other mounds existed.

By the next phase (early Lake Jackson II), the site had grown. At least six occupation areas in the later mound precinct are known. At this time, too, construction on Mound 5 was begun. The presence of at least one platform mound

(perhaps two if Mound 2 was under construction) suggests that the site served as a capital by the twelfth century.

Simple chiefdoms in Apalachee. The earliest evidence from Lake Jackson does not shed much light on political structure in Apalachee because the data are so limited. As noted, however, comparative settlement studies of Apalachee and the Apalachicola River valley (Scarry 1990; Payne and Scarry 1990) suggest that immigrants from the increasingly crowded Apalachicola Valley moved into the sparsely settled Tallahassee Hills by A.D. 1100, bringing a chiefly form of political organization with them.

By the early Lake Jackson II phase (ca. A.D. 1150-1250), at least one platform mound, perhaps two, stood at Lake Jackson. The presence of a platform mound suggests that Lake Jackson assumed the role of a capital around this time. It may, however, have been only one of several similar capitals in Apalachee (see Figure 6-1). Four single-mound sites are known for the western part of Apalachee; four others have been recorded in the eastern part. Construction dates for the mound sites are not known. If these mound sites were in existence by the early Lake Jackson II phase, then Apalachee may have consisted of several minimal chiefdoms, with the Lake Jackson chiefdom having no particular preeminence. No evidence yet exists to indicate that Apalachee political authority at this time derived from the Mississippian chiefly cult that became so important later.

Florescence of Power and Authority at Lake Jackson

Population growth in Apalachee. In Apalachee, population probably continued growing during the late Lake Jackson II phase (A.D. 1250-1400), although it is difficult to make definite statements because settlement studies were conducted

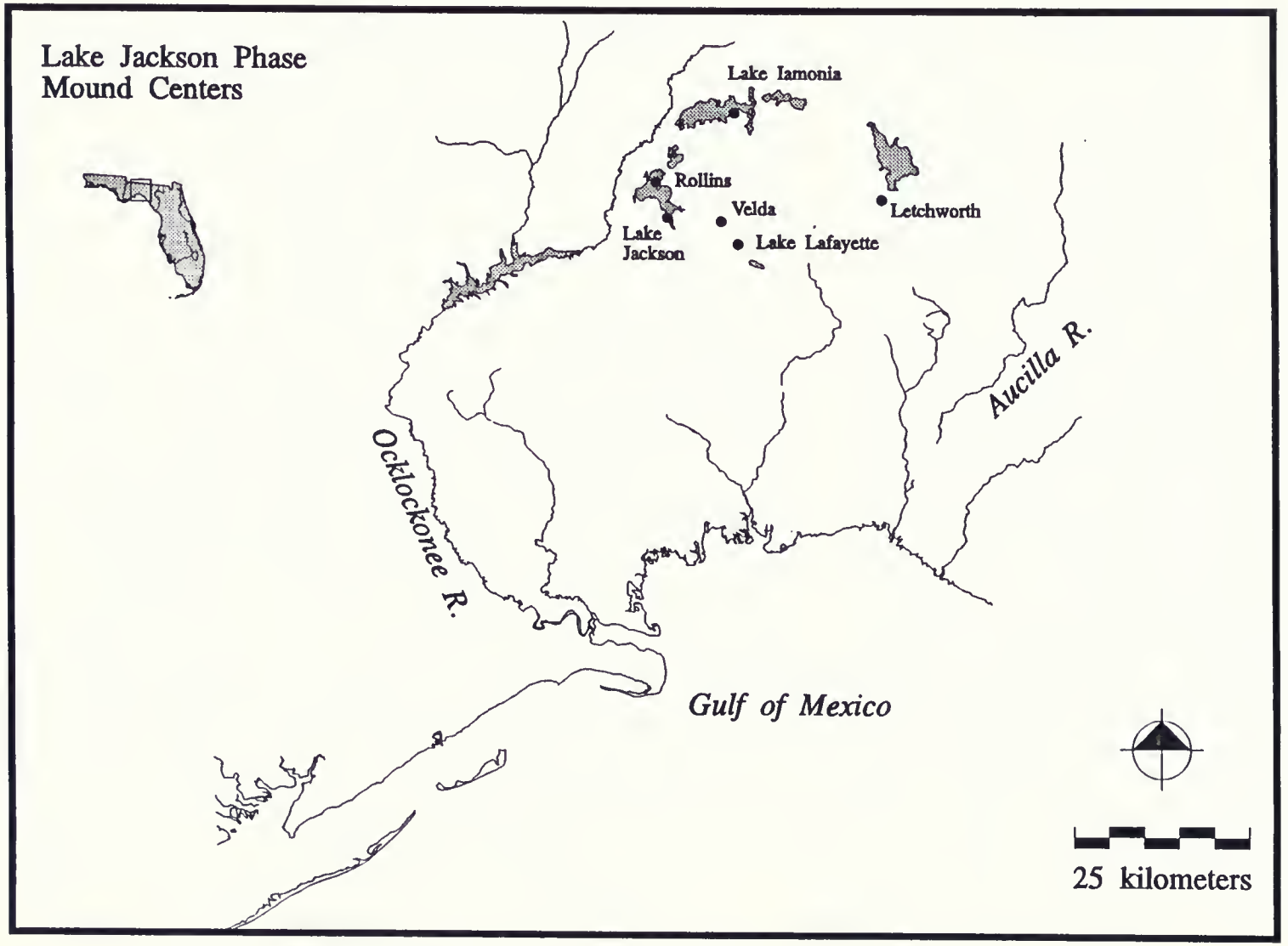

Figure 6-1. Mississippian Mound Centers in Apalachee (three centers not shown due to incomplete locational information). Courtesy of John Scarry.

before the division of Scarry's and Smith's early Lake Jackson phase into Lake Jackson I and II (Smith and Scarry 1988; Payne and Scarry 1990). By this time period, one or more of the several single-mound sites were undoubtedly extant in Apalachee. These mound centers, in combination with the now multi-mound Lake Jackson site (see below), suggest that Mississippian Apalachee operated as a complex chiefdom.

The rise of Lake Jackson. At Lake Jackson, all the mounds in the main precinct probably had been established by this time, and most were probably in use (although Mound 5 may have been abandoned already). Areas of houses had grown up around the mounds, especially around Mounds 2 and 4. In Mound 3, individuals were buried with elaborate and expensive grave goods. The distribution of artifacts and the treatment of the burials suggest that at least two social ranks (nobles and commoners) existed among the Mississippian Apalachee (Jones 1982; Payne and Scarry 1990). Many of the items accompanying Mound 3 burials are not available locally but must have come from the interior of the Mississippian world or from the Gulf coast. Some of the items display motifs and iconography typical of the chiefly cult described earlier. Strong ties to one important Mississippian site are indicated by the artifacts. Two embossed copper plates show definite stylistic similarities to plates from Etowah (Jones 1982:16), and copper headdress ornaments found at Lake Jackson and Etowah are nearly identical (Leader 1988).

As was seen in Chapter 5, the Lake Jackson site is among the largest mound centers in the lower Southeast and ranks in the top 15% of mound centers in the Mississippian world. This relatively large size suggests that Lake Jackson's chiefs wielded substantial power, as does the presence of wealth items such as copper, marine shell, pearls, galena, and mica.

Lake Jackson chiefs also exercised considerable authority. The aligned mounds of the main mound precinct at Lake Jackson point to a strong central authority influencing the positioning of mounds. The height of the main mound (Mound 2) is not known for this time period, but its final height of 11 m is greater than 94% of Mississippian main mounds for which height is known. At the very least, Mound 2 provided a prominent and segregated site for the chief's house during this period. In addition, the temple at Lake Jackson was monumentalized; its platform was about 3 m high at this time. This monumentalization of the religious structure suggests some dependence on religion (probably in the form of the chiefly cult) as a source of authority. These intimations of high authority are bolstered by non-architectural evidence such as the artifacts with burials in Mound 3 (the temple mound). Elaborate chiefly regalia (represented by elaborate copper plates embossed with mythological designs, copper headdress ornaments, capes or mantles adorned with thousands of shell and pearl beads, and non-utilitarian copper and stone celts) attest to a high degree of authority held by the Lake Jackson chiefs.

The data from Lake Jackson and the interpretation of the site as a powerful and authoritative Mississippian capital raise several questions. First, why does Lake Jackson look so typically Mississippian? It stands, after all, at the very edge of the Mississippian world. It seems expectable that influence from non-Mississippian polities would show up in the architecture of Lake Jackson, but that does not occur. Second, how did the rulers of a peripheral chiefdom like Apalachee gain and maintain so much power and authority? And third, why is Lake Jackson, the paramount capital of a powerful chiefdom, located near the western edge of the polity when a

central location would have been more efficient for the conduct of government? These questions are addressed below.

Why is Lake Jackson so Mississippian in form? Apalachee, although not the riverine setting so typical of Mississippian polities, is an excellent environment for an agricultural chiefdom. Even today, its fertile, well-drained soils can produce large quantities of corn, its shallow marshy lakes abound in fish and waterfowl, and deer are so numerous that they venture into suburban Tallahassee. Apalachee's interior, upland setting and farming subsistence base contrast sharply with the setting and subsistence base of sub-tropical Florida chiefdoms of the same time period.

South Florida chiefdoms lined the lush and productive coast of the Gulf of Mexico. The people of these chiefdoms made no effort to adopt corn agriculture (Scarry and Newsom 1992), subsisting instead on the abundant marine resources of estuaries such as Tampa Bay (Griffin and Bullen 1950) and Charlotte Harbor (Marquardt 1992a; Walker 1992). With such a different subsistence base from that of Apalachee, it is not unexpected that the settings of settlements differed as well. Unlike the interior Apalachee capitals, the settlements of the coastal chiefdoms stood near the sea, either on the shore of the mainland (as at Tampa Bay) (Luer and Almy 1981:141) or on islands in estuaries (as in southwest Florida) (Widmer 1988:258). Nevertheless, some settlements bore superficial resemblances to Mississippian mound centers. For example, some capitals included flat-topped mounds which may have served as platforms for important buildings (Milanich and Fairbanks 1980:205, 242; Luer and Almy 1981:141; Widmer 1988:6; Milanich 1994:396-398). But, unlike Mississippian mounds, the coastal mounds were composed largely of shell (Griffin and Bullen 1950) and, in at least some cases, arose through the accumulation of

midden (Marquardt 1989, 1992b). Thus, capitals in coastal chiefdoms differed from Mississippian capitals in setting and in some structural elements.

Unlike the coastal chiefdoms, the Timucuan chiefdoms located just to the east and southeast of Apalachee stood in interior settings with settlements situated near lakes (Johnson 1991:395, 429; Milanich and Fairbanks 1980:171-172). Subsistence information is limited, but fishing, hunting, and occasional freshwater shellfishing occurred (Milanich and Fairbanks 1980:172). Corn was probably grown, but archaeological evidence is limited (Milanich and Fairbanks 1980:172), and farming may have been much less extensive than that carried out in Mississippian polities. Despite some similarities of setting and subsistence, Timucuan settlements do not resemble Mississippian communities. Some villages contained plazas and burial mounds (Milanich and Fairbanks 1980:176), but the platform mounds so conspicuous in Mississippian towns are generally absent throughout the Timucuan world.

The reasons for Lake Jackson's quintessential Mississippian character are both infrastructural and historical. Features such as shell mounds that are typical of the coastal Florida chiefdoms do not occur at Lake Jackson because of fundamental differences in subsistence needs and environmental setting. So, some aspects of Apalachee's capital understandably differ from those of coastal settlements, but why does Lake Jackson's form differ from the Timucuan capitals of interior Florida? The answer lies in historical circumstance: Apalachee was settled by people from the Mississippian world to the west not by people from the Timucuan world to the east (Payne and Scarry 1994).

The Mississippian nature of Lake Jackson was enhanced by the ability of the paramount chiefs to provide coastal valuables to the interior of the Mississippian

world. In return, they received typically Mississippian wealth items and authority symbols. The chiefs' authority derived from their connection with the Mississippian world, and the form and architecture of the capital reflected this. Though located at the edge of the Mississippian world, Lake Jackson is nonetheless an intrinsically Mississippian capital.

How did the Lake Jackson chiefs acquire so much power and authority despite their peripheral location? Although it seems reasonable to think that a peripheral location consigns a capital to marginal status, this does not seem to be the case (Scarry 1993; Payne and Scarry 1994). Far from being a hindrance to the growth of power and authority, a peripheral location may foster growth. Certainly, other peripheral Mississippian capitals became large and wealthy; Cahokia, Angel, Spiro, Bottle Creek, and Ocmulgee all stand at the edge of the Mississippian world. Indeed, these capitals may have become powerful *because* of their peripheral location.

As John Scarry (1993) has noted, an edge-of-the-world location confers some advantages on the residents. Geographically, leaders of peripheral polities are in a position to control both valuable foreign goods and esoteric knowledge. If these tangible and intangible resources are valued but not available in the Mississippian world, the leaders at the edge of the world occupy a very powerful position.

For Lake Jackson, control of a critical node in the Southeastern prestige goods trade network probably accounts for the capital's size and wealth. The most likely candidates for trade items are products of the coastal zone: marine shells, pearls, perhaps sharks teeth, *Ilex vomitoria* leaves, and/or salt.

Shell beads, pearl beads, and sharks teeth have been found by the hundreds in the royal burials in Mound 3 at Lake Jackson, suggesting their importance to the

paramount chiefs. The value of marine shells, in particular, as both wealth items and, in various forms, as authority symbols to the Mississippian world is undeniable (Brown 1976; Phillips and Brown 1978; Knight 1986). Large quantities of shell would have been most easily acquired from large populations engaged in fishing and shellfishing, i.e., from the maritime chiefdoms along the Gulf coast (Payne and Scarry 1994; Brown et al. 1990:271). The ability to provide large amounts of shell to the interior would have put Lake Jackson's chiefs in a position of considerable power vis-a-vis the rest of the Mississippian world. Moreover, control of the symbols of the chiefly cult advertised the Lake Jackson chiefs' legitimacy as Mississippian leaders.

Why is Lake Jackson situated in an apparently inefficient location for governing Apalachee? The best location for the capital in a simple or minimal chiefdom is in the demographic center of gravity for the polity (Steponaitis 1978:432), that is, right in the middle of the population. Such a location gives the chief access to (and potentially, control over) the greatest number of people (and their labor and tribute) at the lowest cost.

If more than one level of political administration is present (as was the case with precolumbian Apalachee), other factors influence the location of capitals. Secondary capitals, for example, tend to be sited closer to the paramount capital than to the demographic centers of gravity for their districts (Steponaitis 1978:433). This is because community interaction in chiefdoms is hierarchical. Individual villages interact with their own capital but not with the paramount center (unless it happens to be their district capital). The secondary or district capitals interact with the paramount capital by sending tribute and laborers collected from their district. Because the district centers (not the individual villages) are the paramount capital's

sources of power (i.e., labor and goods), the best location for the paramount capital is the center of gravity of the subsidiary capitals. How close the actual capital is to its optimal location within a polity can be calculated using an index of spatial efficiency (Steponaitis 1978:436). When the index equals 1.0, the location is ideal. The closer the index is to 0, the less spatially efficient the capital's location is.

The index of spatial efficiency for Lake Jackson within Apalachee (based on information regarding nine known mound centers) is very low: 0.35 (Payne 1981:30-31). Even when only the western of the two groups of mounds in Apalachee is considered, the site's index is not much higher: 0.47. Lake Jackson clearly lies in an inefficient location from which to govern and control the people and subchiefs of Apalachee.

Some other factor must have been operating to offset the costs of the capital's inefficient governmental location. I have previously suggested that "locational inertia" and control of trade may have been factors in the location of Lake Jackson (Payne 1981:30). Locational inertia plays a part if the capital is an early settlement and continues to be occupied simply because it has precedence over other locations. Lake Jackson was occupied very early in the Mississippian period (see Chapter 5), suggesting some priority of location. However, given the propensity for chiefly capitals to move in response to changing situations, priority of place seems unlikely to have been strong enough to offset practical difficulties caused by the capital's inconvenient location.

Control of trade, however, assumes a critical importance in the location of Lake Jackson when looked at from the perspective of the acquisition and maintenance of power and authority. Wealth items from the interior of the Mississippian world

(e.g., copper, galena, and greenstone) have been found at Lake Jackson in chiefly burials. Moreover, many of these items, in addition to being composed of valuable materials (e.g., copper), have forms or designs indicating their use as authority symbols (e.g., copper celts, copper plates embossed with mythological figures). Control of these items by the paramount chiefs at Lake Jackson was essential to the maintenance of power and authority.

Control of wealth items is a source of power (see Chapter 1), providing the chiefs with the ability to gain their goals by offering something valuable in return. Control of authority symbols, as was seen in Chapter 1, is necessary if the chief's power is based on authority. To maintain the right to power, the chief must be able to display symbols of authority to the populace (the outer circle) and, perhaps more important, to bestow upon subchiefs and nobility (the inner circle) occasional tokens of the chief's generosity. Judiciously sharing authority symbols with the inner circle helps to bind them to the chief and to the particular form of legitimacy which supports the chief's authority (most likely the Mississippian chiefly cult). A subchief who proudly displays a copper plate with a religious figure on it, for example, is less likely to respond to a call for revolution based on a new religion. Moreover, presentation of authority symbols by the high chief to subchiefs increases the subchiefs' authority and, through it, power in their own districts. With their own maintenance of power and authority tied to that of the paramount chief, the subchiefs are less likely to rebel.

Clearly, it is critical that the paramount chiefs have exclusive control over access to symbols of the chiefly cult. Individuals other than the high chief cannot have direct access to the authority symbols or the chief's legitimacy is undermined

and devalued. This includes subchiefs whose access must remain indirect (through the high chief). A subchief who gains direct control over authority symbols is an immediate threat to the authority of the high chief.

The importance of maintaining control over this trade in valuables undoubtedly overrode any considerations of governmental efficiency regarding the location of the Lake Jackson site. Indeed, if factors relating to Lake Jackson's location are ranked as follows, the location appears ideal. Subsistence considerations likely ranked highest for the capital. For the Mississippian farmers of Apalachee, this meant a site on or near the fertile soils of the uplands. The lowlands and the coastal zone, with their much lower agricultural potential, would have been excluded. Subsistence considerations also favor settlement around the big lakes (with their abundance of aquatic resources). Next in importance for the capital would have been ease of access to the Gulf coast and to the Apalachicola River (the route to the Mississippian interior). Access to the Gulf coast from Lake Jackson would have been relatively simple, involving a canoe trip about 8 km northwestward along the shore of the lake, a short (ca. 3 km) portage to reach the Ochlockonee River, and from there to the Gulf. The Ochlockonee River also provides the most likely route to the Apalachicola River (via creeks that flow into both major rivers). Locales near the Ochlockonee River would have filled both these criteria. And, finally, the capital would need to have reasonable access to the interior of Apalachee. Given all these constraints, the best location for the capital is at the southern end of Lake Jackson, especially the southeastern side. That the paramount capital stands on the south*western* side of the lake may be simply a result of its early settlement from the west. The general

location is the best possible one for the capital of an agricultural chiefdom for which trading ties to the interior of the Southeast and to the Gulf coast were crucial.

Inflation and Transformation of Power and Authority at Lake Jackson

Events in the Southeast. The late fourteenth and early fifteenth centuries mark the beginning of worldwide climate changes known as the Little Ice Age (Gribbin and Lamb 1978:70; Brose 1989:29; Smith 1986:59), and some parts of the Southeast may have suffered population declines as a result of colder winters and shorter, drier summers. Although the effects of the Little Ice Age on Apalachee are not clear, population decline does not seem to have occurred. Perhaps Apalachee's southerly location and its large expanses of good farming soils buffered the detrimental effects of climate changes.

About this same time, the long-distance trade network in which the Lake Jackson chiefs were such critical participants either declined or changed configuration. Etowah, an important node in the network, appears to have declined sharply in importance during this time (Hally and Rudolph 1986:63-78); the last burials in the temple mound are dated to about A.D. 1350 (Larson 1989:138). Presumably Etowah's decline left a large hole in the exchange network. Indeed, some Chattahoochee River mound centers may have been affected by its demise; the final construction levels in the main mound at Singer-Moye date to A.D. 1350-1400, and construction ceases at the Cemochechobee site around the same time (Schnell et al. 1980:233, 239).

Population growth and settlement aggregation in Apalachee. Population continued increasing in the Lake Jackson III phase (A.D. 1400-1500) in Apalachee. Extensive archaeological surveys carried out in the Tallahassee Hills indicate that settlements were no longer dispersed around the chiefdom as they had been earlier

(Smith and Scarry 1988:359-362; Payne and Scarry 1990); some areas now seem to be preferred over others. Settlement declined in the northern part of the region but increased in other areas, especially in the vicinity of the Lake Lafayette site (on the shore of one of the four major lake basins, a lake that is now dry) about 12 km southeast of Lake Jackson (see Figure 6-1).

Centralization at Lake Jackson. Within the survey area at Lake Jackson, the immediate vicinity of Mound 2 (the main mound) became the preferred place to live. Other, previously occupied, areas show less sign of settlement. It is unclear whether the changes in settlement at Lake Jackson represent a population decline or just a concentration of the capital's residents near Mound 2. And, of course, the distribution of living areas on the south side of the main mound precinct is unknown. During this time, a burst of mound-building activity occurred in the temple platform (Mound 3). About a meter and a half of earth was added in one building stage (Jones 1994:124-126), constituting about 30% of the total height of the mound. On Mound 2, the final building stage, at 86 cm, was not as deep but may have represented as substantial an investment of labor because of the larger size of Mound 2. Accompanying this flurry of building was an increase in the number and richness of burials in Mound 3 (Scarry 1990:181; Jones 1994:139-145).

Items accompanying burials from this time period differ from those of earlier periods. Earlier, copper or stone celts and embossed copper plates never occurred in the same burials. John Scarry has interpreted these artifacts as authority symbols associated with two chiefly offices (Scarry 1990:181; cf. also Peebles 1978 and Brown 1971). In several burials from the final stage of Mound 3, celts and copper plates occur together, leading Scarry to postulate that the two offices were now often held

by one individual, perhaps indicating increasing centralization of political authority (Scarry 1990:181).

Not long after this spate of chiefly ostentation, the Lake Jackson site was abandoned as a capital. All the mounds for which we have information were finished no later than Lake Jackson III, and very little indication of later occupation occurs at the site. To address the question of why Lake Jackson was abandoned seemingly so abruptly, we must consider the importance of advertisement of chiefly power and authority to the inner and outer circles.

Why was Lake Jackson abandoned? At the beginning of the Lake Jackson III phase, the Lake Jackson chiefs were active participants in the extensive Southeastern trade in prestige goods. Clear and strong ties with the Etowah site, in particular, are demonstrated by the presence at Lake Jackson of artifacts (especially copper) stylistically similar to ones found at Etowah. Lake Jackson's ability to provide and acquire wealth and status items (e.g., marine shells in return for copper plates and celts) undoubtedly played a role in the maintenance of chiefly power and authority. The form and size of the capital indicates that this endeavor was successful.

Around A.D. 1350, Etowah and some mound centers in the Chattahoochee River valley were abandoned or declined in importance for reasons unclear at this time. Jon Muller suggests that, at about this time, long distance trade slowed or stopped throughout the Southeast (Muller 1989:16); he notes that this event coincided with the abandonment of some northern capitals (Muller 1989:16). Some researchers have suggested that these abandonments and the changes in the trade network may be connected with the onset of the Little Ice Age (Smith 1986:58-59; Brose 1989:29).

Whatever the cause, the removal of Etowah and perhaps of intervening nodes (Chattahoochee River sites) from the network apparently resulted in fewer imported goods arriving at Lake Jackson in the period from A.D. 1350 to 1450. The few burials from this time range show a drop in imported goods (see Jones 1994:140).

Without a continuing supply of wealth items and authority symbols, the Lake Jackson chiefs would have had difficulty advertising their legitimacy to the inner and outer circles. Now, if the polity continued prosperous with adequate food, external security, and internal security, the outer circle may have been satisfied. The power interaction between chief and outer circle would have remained essentially unchanged: the followers got the benefits mentioned above and the chief got the followers' support. However, the inner circle, whose own power and authority relied on the high chief's and who were natural rivals to the paramount, likely would have become increasingly discontent. Recall that to keep the support of the inner circle, it is imperative that the paramount share his authority with them to some degree. This means, among other things, sharing symbols of the Mississippian chiefly cult.

If the chief is unable to satisfy the inner circle, threats to his power and authority rise. In times of stress, when the ruler cannot control the situation directly, calls to authority increase (cf. Cohen 1988:19), sometimes extravagantly. Archaeological evidence of such increased calls to authority are clearly evident at Lake Jackson in the large final construction stages in Mounds 2 and 3, in the consolidation of chiefly offices, and in the last-gasp spectacles of the lavish and improvident royal burials in Mound 3's last stage. Ironically, this "inflation" would have resulted in even greater scarcity of authority symbols, and a point soon would have been reached where the chief or his successors were unable to maintain their

legitimacy in the eyes of the inner circle due to the inability to acquire and bestow chiefly cult items.

With chiefly religious authority rapidly diminishing, challenges to the chief's *power* by the inner circle would have assumed great importance. Chiefs ruling Apalachee from its western fringes, while previously in an ideal location to maintain control of Mississippian prestige goods and thus of authority would have found themselves in a very inconvenient location for exercising power over unruly subchiefs, most living much closer to the bulk of the Apalachee populace. Now that the factors offsetting Lake Jackson's inefficient location for governing Apalachee (access to coast and to Mississippian world) no longer played an important role in maintaining legitimacy, the Lake Jackson chiefs would have faced a critical decision: abandon the connection with the Mississippian chiefly cult and turn their attentions to the ruling of Apalachee or attempt to maintain their connections with the Mississippian world and risk losing the paramountcy to a rival district chief.

Apparently the paramount chose the former, for in 1539 the capital stood at Anhayca, 8 km southeast of Lake Jackson, a location much closer to the demographic center of the population of Apalachee (Figure 6-2). With the move, the chiefs abandoned the Mississippian chiefly cult symbols of copper celts and embossed plates and, most importantly in regard to the subject of this dissertation, they abandoned Mississippian architecture. Anhayca was probably occupied for about 100 years and no platform mounds were built. The chiefs of Apalachee remained powerful, but their claims to legitimacy must have rested on something other than the Mississippian chiefly cult.

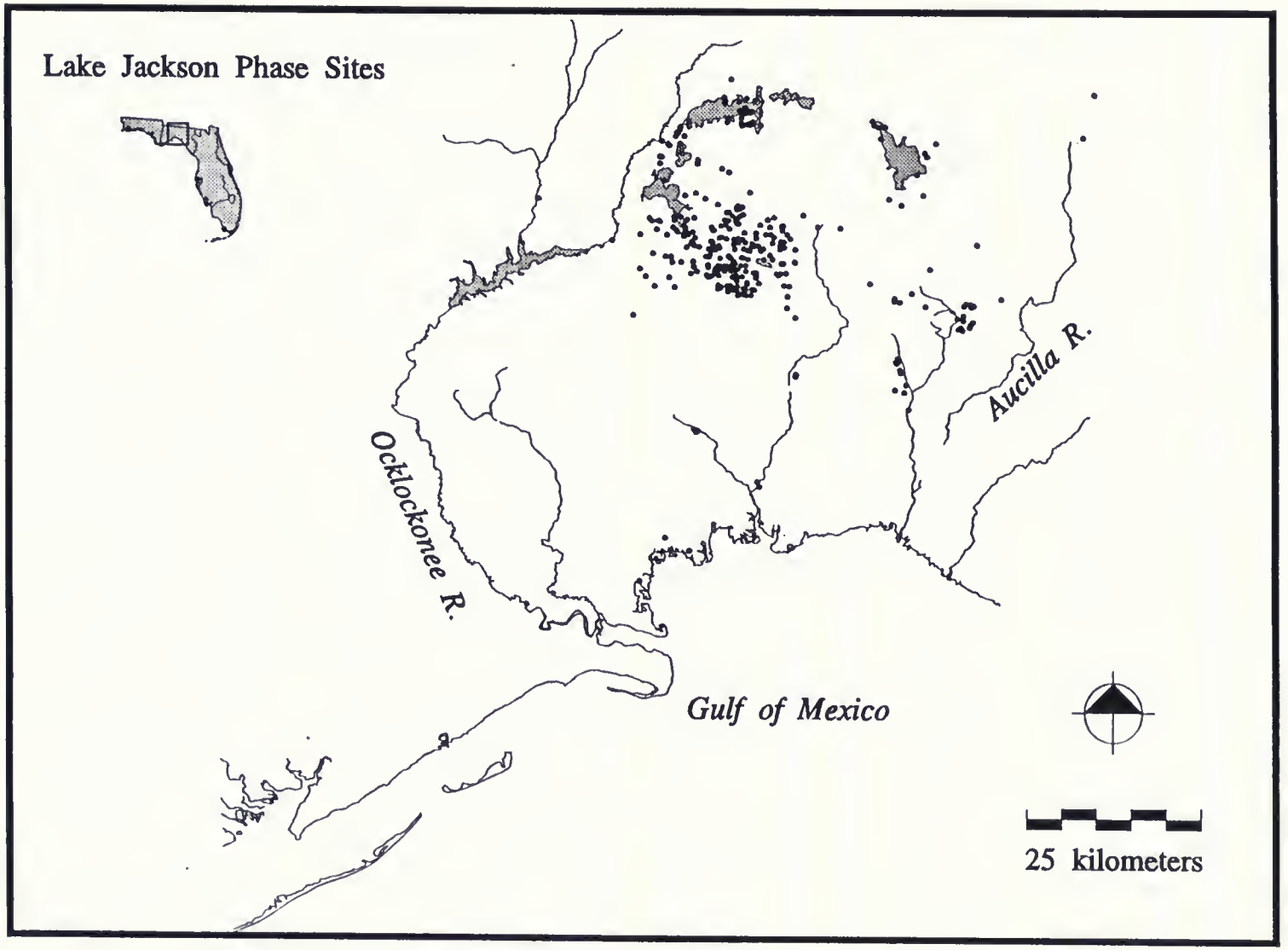

Figure 6-2. Mississippian Site Distribution in Apalachee. Courtesy of John Scarry.

Scarry (1990:183) has suggested that the changes occurring in Apalachee around A.D. 1500 represent the replacement of one ruling family by another. In chiefdoms, where the paramount is simply a district chief who is more powerful and more authoritative than other district chiefs, this interpretation has merit. Other chiefs are always in a position to challenge the power of the paramount and rise to that position themselves.

In Apalachee, however, this situation appears not to have been the case (at least at this time[1]). In the Mississippian period, the capitals are distinct in the archaeological record: they are marked by platform mounds. Five mound centers occur in the western (and most heavily occupied) part of Apalachee (see Figure 6-1). During the Lake Jackson III phase, population increased substantially in the vicinity of one of these district capitals--the Lake Lafayette mound (Smith and Scarry 1988:360) (compare Figures 6-1 and 6-2). Had the Lake Jackson chiefs, in their struggle to maintain power and authority, lost the paramountcy to the Lake Lafayette chiefs, the new capital would certainly have been established within that territory (a common chiefly move). In fact, such a location would have placed the capital very close to the center of the Apalachee population and to the demographic center of the district capitals.

The new capital (Anhayca), however, was established at the Martin site 8 km southeast of Lake Jackson and 7 km west of the Lake Lafayette area. This area, though more efficient for governing Apalachee than the Lake Jackson site, is less so than a location in the vicinity of Lake Lafayette. The choice of the Martin site location

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[1] The later (seventeenth century) importance of the chief of Ivitachuco, a town located on the eastern border of Apalachee, may reflect just such a situation as Scarry postulates.

suggests that the new capital was established within the district of the Lake Jackson chiefs (perhaps at the eastern edge of that territory). Movement of the capital within the Lake Jackson territory implies that the chiefs of the Lake Jackson district were able to retain the paramountcy. Perhaps the continuing internal prosperity of the polity allowed the Lake Jackson chiefs to maintain their position in the face of the transformation of authority.

Without the distinctive Mississippian features, Anhayca may have looked more like towns in interior Florida chiefdoms. The new look of the capital suggests that Apalachee, in turning away from the Mississippian world, turned toward the Florida world. Certainly, this seems to have been the case by the seventeenth century when Apalachee pottery and Timucuan pottery strongly resembled each other and when eastern Apalachee chiefs assumed greater governmental importance within the polity.

Studying Capitals to Analyze Political Structure

Approaches to studying Mississippian capitals. Recognizing the value of studying the built environment of capitals to analyze political organization opens several avenues of investigation. First, the capitals themselves can be analyzed in at least three ways: (1) in a broad geographic approach (for an example, see the analysis of the distribution of the largest Mississippian mound centers presented at the end of Chapter 3); (2) in a regional study (e.g., comparisons of capitals in the lower Southeast or in the Mississippi Valley, etc.); or (3) in a diachronic site analysis (such as the analysis and interpretation of the Lake Jackson site presented in Chapters 5 and 6).

Another avenue of exploration might be to take a particular feature known to reflect power and/or authority in chiefdoms (e.g., chief's house, chief's storage, religious structure, etc.) and examine its manifestations in Mississippian capitals. The

information and analyses in Chapters 4 and 5 provide a foundation for this type of study.

And finally, one could select a prominent feature of the Mississippian landscape (e.g., platform mounds, plazas, earthworks) to investigate the ways it reflects power and authority (cf. Knight 1989 on platform mounds, Holley et al. 1993 on plazas, Lafferty 1973 on fortifications, and Stout and Lewis 1993 on several aspects of Mississippian architecture).

The benefits of studying capitals. Focusing on capitals as a means of exploring political structure has several advantages. First, as noted above, the capitals can be studied at any of several scales (Mississippian world, regional, or local), so a variety of issues can be addressed. Second, because architectural data are highly visible and easily accessible, much information is available. Thus, the potential for comparative studies is high. And, third, analyzing the architecture of capitals allows for the possibility of studying political structure even if investigations and data are limited. For example, political structure analyses can be carried out at a capital even if data on the chief's house are all that are available. Extensive data or investigations, while desirable, are not essential for the study of capitals.

Mississippian capitals. The concepts of power and authority have proven to be useful in the study of political structure. This is primarily because the public nature of the concepts (i.e., the need for interaction between leaders and populace) requires that leaders advertise their access to power and authority in order to maintain them (Chapter 1). One highly effective means of advertisement is through architecture, especially the architecture of the capital. And, indeed, cross-cultural data on the size

and structural characteristics of chiefly capitals show clearly that the built environment of capitals reflects aspects of political structure (Chapter 2).

Analysis of the size and structural characteristics of Mississippian mound sites (Chapters 3 and 4) reveals the wealth of documentary and archaeological data on Mississippian capitals. This abundance of data makes possible broad comparative analyses of many architectural features of Mississippian capitals. Many issues, of course, remain to be explored. Much is unknown, for example, about Mississippian storage. And, although the diversity of Mississippian platform mounds was noted in Chapter 4, a great deal remains to be learned about the many forms and functions of what is too often regarded as a homogeneous group.

Turning from comparative analyses, closer looks at individual Mississippian capitals shed light on the dynamics of political structure. Archaeological investigations at the Lake Jackson site, capital of precolumbian Apalachee, provide the foundation for analyses of transformations in power and authority both within the larger context of the Mississippian world and the narrower world of Apalachee (Chapters 5 and 6).

With a multitude of approaches and a large body of extant data available, the study of Mississippian mound centers holds great potential for enhancing the understanding of Mississippian political structure.

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BIOGRAPHICAL SKETCH

Claudine Payne lived in many places while growing up, including Puerto Rico, Oklahoma, New Jersey, and Germany, as well as several states in the American South, as her family accompanied her Army-officer father from post to post. In contrast to her well-traveled early years, she has lived mainly in Florida since 1969 and thinks of Florida as home.

Ms. Payne graduated from the University of Central Florida in 1971 with a B.A. in art history. Pursuing an interest in America's past, she went on to study anthropology at the Florida State University, earning an M.A. in 1974.

Ms. Payne has been an archaeologist for nearly 20 years. For several years she worked at the Florida Master Site File, the central cultural resource inventory for the state of Florida, and later she managed grants at the Bureau of Historic Preservation. Interested in communicating knowledge about the past, Ms. Payne has turned to editing technical and popular articles and books on aspects of Florida archaeology and prehistory. In addition, she has written articles (both popular and scholarly) and created educational materials related to Florida's heritage. And, combining interests in verbal and visual communication, she has designed brochures and books on archaeological topics.

With Florida's archaeological resources rapidly disappearing due to development and environmental changes, Ms. Payne's primary interest today lies in

preserving Florida's past. One step toward this goal is to educate the public (especially the children) about the importance of (sometimes, in fact, about the very existence of) Florida's 12,000-year heritage. Toward that end, Ms. Payne continues writing, editing, and designing materials for the general public and working in public outreach programs.

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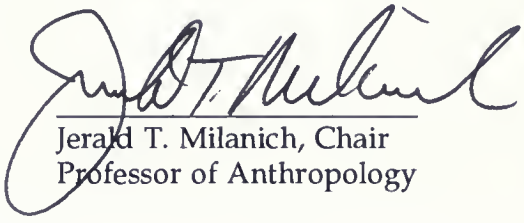

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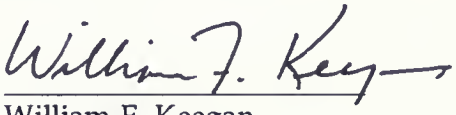

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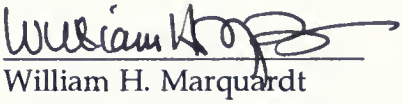

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Michael E. Moseley
Professor of Anthropology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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This disseration was submitted to the Graduate Faculty of the Department of Anthropology in the College of Liberal Arts and Sciences and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December 1994

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Dean, Graduate School